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CRISIS MANAGEMENT:
ANALYSIS OF THE MANAGEMENT OF COMMUNAL CATASTROPHIES

BY

RON KUBAN ©

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

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THE UNIVERSITY OF ALBERTA

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled CRISIS MANAGEMENT: ANALYSIS OF THE MANAGEMENT OF COMMUNAL CATASTROPHIES submitted by RON KUBAN in partial fulfilment of the requirements for the degree of DOCTOR OF PHILOSOPHY.

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Date: September 20, 1993

For my best friend and marriage partner
Wendy Mitchell-Kuban
who has been my support
through this and many other difficult journeys,
and, for our daughter **Kaitlyn Raye**
who provides us with inspiration.

ABSTRACT

The primary purpose of this study was to use the perceptions of crisis managers to define the management process required to respond to community-wide crises. A secondary purpose was to identify the means through which crisis managers can be developed to fulfil their unique crisis roles.

Data were gathered using a questionnaire and two levels of interviews. The questionnaire included both open and closed-end questions. It was administered to 200 Canadian crisis managers from various organizational backgrounds. The response rate was 58.5%, and yielded quantitative and qualitative data.

Twenty three interviews were conducted. They provided qualitative data on the crisis management process, its components, and the training of crisis managers.

The statistical data from the questionnaire were analyzed according to the professional background of responders. This analysis did not reveal statistically significant differences. However, coupled with an extensive review of the qualitative data, the data provided the basis for a broad framework of crisis management.

The study led to a number of findings. Key among them was the observation that the tasks required of crisis managers and those required of day-to-day managers are almost identical. Both types of managers are required to plan, organize, direct, control, and communicate. However, a significant difference between the tasks performed in crises and those of daily operations is the 'context' in which they are preformed.

Crisis management functions are preformed in a unique and extremely stressful environment. Crises have a tremendous impact on individuals, organizational behavior, and the way in which (crisis) managers can manage. The impact is so significant that effective day-to-day managers may not necessarily be effective as crisis managers.

The study concluded with recommendations for practice, further research, and theory development.

ACKNOWLEDGEMENT

"Isaac Newton (1642-1727) is said to have commented that 'if I have seen further, it is because I have stood on the shoulders of giants'." (Lincoln & Guba, 1985, p. 19). I have been fortunate, and am honoured, to have stood at home, at school, and at work on the shoulders of so many giants. I am grateful to all of them. Though unable to acknowledge each of them separately below, I will always recall their effort with gratitude.

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To all my sincere thanks and best wishes. May we never have to use our skills in crisis.

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CHAPTER 1

Introduction to the Study

The preoccupation of human beings with disasters can be traced to the beginning of recorded history. The story of Noah's ark, perhaps the first historical account of a disaster, illustrates the fears associated with natural disasters. More recently, the fear of disasters evolved to include concerns over armed conflicts, technological catastrophes, and other crises affecting social networks, property, communal infra-structures and the environment.

Humanity's ever-present concerns with survival and the prevalence of disasters throughout history, have encouraged significant disaster preparedness and response activities. One such activity--the training of responders and the education of the general population towards survival during disasters--exists in nearly every nation and culture. Yet, research on these significant educational efforts is scarce, and is particularly limited in two key topics areas. One is the process of crisis (or disaster) management, the other is the education required by those who manage or supervise their community's disaster response operations.

Purpose of the Study

The management of crisis situations, especially those affecting whole communities, requires skills beyond those demanded by day-to-day management practices. Crisis managers are often thrust into the bewildering environment of crises with little more than basic technical training and rudimentary management skills. Comfort (1989) was on the mark when she reported that "when human lives are at risk, the urgency of time compresses the opportunities for action into brief periods that allow little margin for error. Consequently, the cost of error is higher, and the value of effective performance, elusive in this difficult context, is greater" (p. 333).

What crisis managers require, but often lack, is an understanding of what crisis management is all about. This study sets the stage for a training program on crisis management. The program would be aimed at those who might be tasked with managing a multi-agency multi-jurisdiction response to a community disaster or crisis.

Statement of the Problem

The principal question answered by the study is:

> What activities are involved in the successful management of community-based crises?

A number of more detailed questions are addressed to guide the study. These questions are as follows:

1. What management activities do managers perform in a community crisis which would not be generally required in day-to-day management roles?
2. According to individuals who managed a community's response to a crisis what was required of them and what should have been included in their training programs?

Background to the Problem

In one form or another, emergency preparedness and disaster response activities have always been a part of the human experience. During this century these activities--mostly under the banner of 'civil defence'--gained significant prominence. They were seen as the route to enhance the population's ability to survive both during and following conventional and nuclear wars.

The 20th century was a period of rapid technological and scientific advancement with complementary catastrophic consequences. Currently, common everyday substances are more hazardous, in greater proliferation and mobility, and at a higher risk for being in an accident than ever before (Auf der Heide, 1989; Drabek, 1986; Petak, 1985; Quarantelli, 1982, 1985; Raphael, 1986).

With the military threat to human survival greatly reduced, the focus of attention has shifted to natural disasters, technological accidents involving hazardous materials, and what Perrow (1984) called 'normal accidents.' Such accidents are often the outcome of a series of typically smaller and sometime insignificant incidents which snow-ball into a 'disaster'.

While natural and man-made disasters occur frequently and typically result in much suffering and damage, many disasters can be prevented, minimized, or have their consequences--death, injury, and destruction--reduced or even eliminated. This realization has motivated the 85th United Nations General Assembly on December 22, 1989, to declare the period of January 1990 to December 1999 as the 'International Decade for Natural Disaster Reduction' (*Caribbean Disaster News, 20*, p. 1).

The vast literature which is directly related to the research problem may be found in a number of broad fields of study such as sociology, organizational behaviour, and administration. This literature may be grouped into four general categories: descriptive and prescriptive studies of day-to-day management practices, descriptive studies of the responses of individuals to disasters, descriptive studies of organizational responses to disasters, and both descriptive and prescriptive studies of crisis management practices.

Significance of the Problem

The study focuses on a problem of global magnitude. "According to United Nations reports, over the past two decades natural disasters have killed some 3 million people, upset the lives of at least a further 800 million, and caused damage in excess of 23 billion US dollars" (Anderson & Woodrow, 1989, p. vii).

Mileti, Drabek, and Haas (1975) suggested that although "the data are grossly inadequate the evidence suggests that economic losses within the United States exceeds five billion dollars annually" (p. 14). Petak and Atkinson (1982) estimated that by the year 2000 the costs resulting from natural hazards would amount to almost 18 billion dollars annually (cited in Raphael, 1986, p. 37). Petak (1985) estimated that the dollar losses from disasters in the year 2000 will be double that of the 1980 disaster losses.

Unfortunately, disaster losses are escalating at alarming rates mainly because an increasing proportion of the population is settling into disaster-prone areas (Quarantelli, 1982, 1985). Auf der Heide (1989, p. 4) noted that "there is greater settlement in high-risk areas such as floodplain, earthquake faults, coastal hurricane areas, unstable hill sides, areas subject to wild land fires, and areas adjacent to hazardous waste landfills, airports, and nuclear power plants (Petak, 1985; Cigler, 1986; Drabek, 1986:341, 374; Lantis, 1984:2)." H.G. Wells stated the issue succinctly in *History of the World*: "human history becomes more and more a race between education and catastrophe."

Various training programs are available throughout the world to those who are expected to be involved in disaster response efforts. These trainees typically include fire fighters, police or constabulary personnel, health professionals from various types of agencies, government officials, and professional search and rescue personnel. Their training is often technical and is taught in an environment which does not fully relate the destructive and disruptive effects of disasters on individuals, organizations, and systems.

Relatively few training institutions currently deliver courses on disaster-management topics. The researcher's direct and indirect experiences with many such courses is that they frequently fail to relate the full impact of disasters on organizational behaviour and management practices. Trainers often imply that everyday management practices, with minor or no modification, are all that is required to manage a disaster. Moreover, the phenomenal stress level inherent to all crisis operations is rarely experienced during training.

Extensive disaster experience and research indicates that those who manage organizations during disasters must adapt traditional management practices to the unique 'disaster' environment. Few if any disaster-management and leadership-style models are currently available to assist crisis managers. Furthermore, the research on the training requirements of crisis/disaster managers is limited in its quantity and scope.

Assumptions, Delimitations and Limitations

Assumptions

A major assumption underlying this study is that the period immediately following the impact of a disaster can in fact be managed through concerted and organized manner. The researcher also assumed that the actual components of crisis management can be identified and analyzed.

Research also indicates that disasters have a relatively similar disruptive effect upon the local 'system' regardless of geography, size of community, culture, season of the year, or time of day. The researcher assumed that crisis management principles and practices have broad general similarities which transcend the socio-economic, cultural, educational, or professional backgrounds of those who managed a crisis.

Delimitations

The study is delimited by the following factors: by *function* to those who managed the response to major disasters; by *geography* to disasters which occurred anywhere in Canada; and by *time* to the period January 1, 1985 to December 31, 1991. The study is also delimited by its aim to provide a basis for a crisis management training program. Another major delimitation is the structuring of the problem and its focus on the management of multi-agency response to community related disasters.

Limitation

A major limitation of the study is the knowledge of crisis managers. They were likely extremely busy during their respective disaster. Consequently they may not have gained a complete knowledge of the events which took place, or, may currently lack a clear grasp of the skills which they employed to manage that disaster.

Definition of Terms

The term 'disaster' has numerous meanings. It serves to define a disaster agent (e.g., an earthquake or a fire), a physical impact of the agent, an evaluation of the physical event, or a social disruption created by the event (Dynes, 1970). This study will maintain consistency with much of the literature which discusses disasters, catastrophes and crises interchangeably (Auf der Heide, 1989; Charles & Kim, 1988; Cohen & Ahearn, 1980; Drabek, 1986; Dynes, 1970; FEMA, 1984; Mileti, Drabek, & Haas, 1975; Quarantelli, 1985; Raphael, 1986; Rosenthal, Charles, & Hart, 1989).

To ensure consistency of usage throughout the study the following terms are explicitly defined below.

A disaster, crisis, or catastrophe. This is "an event, located in time and space, in which a community undergoes severe danger and incurs losses so that the social structure is disrupted and the fulfilment of all or some of its essential functions is prevented" (Fritz, 1961, cited in Dynes, 1970, p. 78).

Crisis manager. This is the individual whose task it is to manage organizational resources and activities to overcome the effects of a disaster or a crisis, and to return its operations to pre-crisis state.

Disaster response. Any activity which individuals and organizations undertake to minimize the negative impact of a disaster, or reduce the potential for further damage.

Disaster management. This is the systematic effort to manage disaster response operations.

Disaster preparedness. The strategic process by which an organization or a community undertakes steps to minimize the probability of a disaster taking place, or minimize the consequences should such a disaster occur is considered disaster preparedness.

Man-made disasters. These are disasters or crises which were caused primarily by human error or omission (e.g., technological accidents) or malice (e.g., strikes, terrorist activities).

Natural disasters. These are disasters which are caused primarily by the force of nature (e.g., floods, earthquakes, tornadoes, and blizzards).

Responders. They are the various individuals from a range of backgrounds who provide assistance in disaster situations. These individuals typically represent fire fighters, police constables, health professionals (including EMTs and hospital personnel), search and rescue staff members, and a host of others.

Outline of the Study

Chapter 1 introduces the problem and outlines a number of the key studies leading to it. The problem is outlined, the research aims are detailed and a number of key relevant terms are defined. This chapter also includes a statement of assumptions, delimitations and limitations which are related to the study.

Chapters 2, 3 and 4 contain separate components of the literature review. Chapter 2 relates to general management practices. Chapter 3 addresses the effects of disasters on individuals and organizations. Chapter 4 includes a discussion of crisis management operations, as well as the conceptual framework. The studies reported in chapters 2, 3 and 4 provided the basis for the development of both the research instrument used in this study and the orientation to the study.

Chapter 5 outlines the development of the research instrument, the methodology of data collection, and the techniques employed to analyze the data.

Chapter 6 contains a profile of the respondents to the research instrument. These individuals represent disaster responders from across Canada.

Chapter 7 provides an analysis of the primarily quantitative data collected through the research instrument. It provides a snap-picture view of the environment in which the respondents to the study had performed their disaster management roles in the early phase of crisis operations.

Chapter 8 provides a broader analysis of crisis management functions based on an analysis of the primarily qualitative data collected through the research instrument. Also presented are the significant factors, contextual distinctions, and similarities among the responses.

Chapter 9, the final chapter, summarizes the study. It contains the specific findings of the study and the conclusions which are drawn from its data. Also presented are the implications for practice, theory and research.

Summary of Chapter 1

In Chapter 1 the problem was introduced and placed in perspective. The need for the study and its significance for disaster planners, disaster responders, and their teachers was defined. A statement of the problem was followed by definitions of key terms, key assumptions, and a statement of the delimitations and limitations of the study.

CHAPTER 2

Literature Review: General Management

In *The History of the World,* H. G. Wells stated "Human history becomes more and more a race between education and catastrophe." Current reports of disasters, calamities, and crisis bear the truth of his statement. With the ever increasing costs and consequences of disasters and crises--like Chernobyl, Bhopal, Mississauga, Mount St. Helen, Three Mile Island, and many more--it is imperative to hone the skills of those who are expected to lead their communities in emergency preparedness and disaster response. For a lack of a better title, these are ... the "crisis managers."

Chapters 2, 3 and 4 contain a three-part review of the literature related to the topic. Chapter 2 outlines the literature on day to day management. Chapter 3 consists of a review of the literature on the effects of disasters on individuals and organizations. Chapter 4 contains literature references specific to the management of crises.

Chapter 2 consists of a review of management as it is presumed or recommended to be practiced in day-to-day organizational circumstances. Management, manager, and managerial work are defined to provide a broad context. The universality of management functions is then discussed followed by a review of the making of effective managers.

An Overview of Management

There is perhaps no other topic so frequently discussed, researched, and reviewed as 'management.' It has become the topic of much academic effort and practical review. Drucker (1988) remarked that "rarely in human history has any institution emerged as fast as management or had as great an impact as quickly" (p.65). He then added that "in less than 150 years, management has transformed the social and economic fabric of the world's developed countries" (p. 65). Yet, despite the increasing literature on the topic, management is still apparently confusing, vague, and contradictory in its messages to actual and prospective practitioners.

The criticism levelled against the massive literature on management is valid primarily because the term 'management' often has different meanings under varying contexts. For example, management "refers to the process followed to achieve organizational objectives, [identifies] a cumulative body of knowledge on 'how to manage', [is used to] identify those individuals who guide and direct organizations, [and] designates a career devoted to guiding and directing organizations" (Certo & Applebaum, 1983, p. 9).

Koontz (1972a) identified six different 'schools of management' each with its own semantic jungle. He noted that the management theorists from the different schools are often unwilling to understand those from other 'schools.' He also stated that often members of one school misunderstand or disregard the concrete principles of management of another school (pp. 14-16).

Drucker (1974) suggested that the confusion is further aggravated by the way the literature and the teaching of management is divided into three main categories: skill focused, discipline focused, and function focused. His preference was on the 'functions' of managers and their management process.

Grappling With Management's Definitions

The study of management is made more complicated by a plethora of definitions for 'management', 'manager', and the respective 'management functions.' The fact that there are no easy catch-all definitions which address all the necessary components creates a confusion which frustrates meaningful dialogue on these topics. The following definitions briefly illustrate the problem.

'Management' Defined

Bassett (1972) quoted from Forbes (Sept. 15, 1967) to say that "the one clear lesson after study of fifty years of U.S. business is: If a company has nothing going for it except one thing - good management - it will make the grade. If it has everything going for it except good management, it will flop" (p. 437). Such is the value of 'management.' In 1974 Drucker wrote that management is "the life-giving, acting, dynamic organ of the institution it manages" (p. x).

Hersey and Blanchard (1982) defined management as "working with and through individuals and groups to accomplish organizational goals" (p. 3). Certo and Applebaum (1983) defined management as "the **process** of reaching organizational goals by working with and through people and other **organizational resources**" (p. 9). Koontz (1972a) stated that management "has far from standard meaning, although most agree that it at least involves getting things done through and with people" (p. 14).

Drucker (1974) stated that management "is a discipline, or at least is capable of becoming one. It is not just common sense. It is not just codified experience. It is at least potentially an organized body of knowledge" (p. xi). He also emphasized that "managing the business enterprise or a public service institution is inherently different from managing one's own property or from running a practice of medicine or a solo law practice" (Drucker, 1977, p. 9).

Drucker (1988) suggested that "the fundamental task of management remains the same: to make people capable of joint performance by giving them common goals, common values, the right structure, and the ongoing training and development they need to perform and to respond to change" (p. 65). He noted that "above all, [management] is responsible for producing the results . . . for the sake of which each institution exists" (Drucker, 1974, p. 17).

Sergiovanni and Starratt (1988) reviewed school management practices, which they termed 'supervision.' They concluded that supervision "can be viewed as a process component of a variety of administrative and supervisory roles or as a label to categorize roles the primary responsibility of which is the improvement of instruction" (p. 36). In other words, management has an influence on the final product of the business in which it is applied.

As a field of knowledge, management is unique in that "management--almost alone--has to live always in both present and future" (Drucker, 1974, p. 44). He also noted that the very meaning of management has changed because of the evolution of the work force towards highly educated knowledge workers.

'Manager' Defined

By its very definition 'management' necessitates a 'manager.' The difficulty is that "the word 'manager' has no exact counterpart in German, French, Spanish, Italian, or Russian; yet the words used in these languages are as imprecise and elusive as 'manager' is in American" (Drucker, 1974, p. 390).

Mintzberg (1973) stated that "the manager may be called by different titles, found in any level of the organization except the lowest, be involved in a variety of organizational functions, [and] have a great deal or nil experience" (p. 100). He added that "the manager is both a generalist and a specialist"--a generalist within the organization but a specialist as an individual within a profession (p. 4).

Mintzberg (1973) also lamented about how little we know about this entity called the 'manager.' He noted that:

> The manager is the folk hero of contemporary American society. Yet we know so little of what he does. We are told that in him lies the American genius for efficiency--that it is to this corps of ten or more million individuals that America owes her material and organizational success (p. 2).

A few years later, Mintzberg (1989) wrote that "no job is more vital to our society than that of the manager. It is the manager who determines whether our social institutions serve us well or whether they squander our talents and resources" (p. 24). This is particularly significant in view of the fact that the society of the 20th century is a society of organizations whose members are better educated than ever and whose primary tasks are often the management of knowledge and not resources (Drucker, 1974).

Allen (1973) added that managers have "a unique organizational position. [They have] four interfaces which so place [them] organizationally that only [they] can have the objectivity, perspective, and balance to satisfy the varying and sometimes conflicting needs of [their] subordinates, peers, and superior[s]" (p. 44).

Drucker (1974) was brutally precise in the purpose of managers. He stated that "a manager's job exists because the task facing the enterprise demands its existence--and for no other reason" (p. 405). He also noted that a manager's job may be defined in a number of ways. These include: the specific function or the job itself, the job's assignments, through relationships, and by the information required for the job as well as the manager's position within the organization's information flow (pp. 414-415).

Many of the definitions of 'managers,' however, concentrate on the relation of the manager to organizational goals and their attainment. Certo and Applebaum (1983) stated that "essentially, the role of managers is to guide organizations toward goal accomplishment" (p. 9). In his discussion of the management of volunteers, Geber (1991) stated that "management is a process of organizing work and treating people in ways that will inspire them to be as productive as possible" (p. 26). Anthony (1981) viewed managers as "energizers, catalysts, organizers" (p. 3). Kirkpatrick (1982) noted that "the major challenge that faces managers in all types of organizations is how to get maximum performance from their subordinates" (p. 7).

Drucker (1977) concluded that "management may be the most important innovation of this century. . ." (p. 8). He added that "management is tasks. Management is a discipline. Every achievement of management is the achievement of a manager. Every failure is a failure of a manager" (p. 11). And yet, there is no consensus on who the manager is, let alone what specifically he or she does.

Mintzberg (1973), for example, stated that "the evidence shows that the incumbent's values, his personality, and his staff, all contribute to the determination of the work he does" (p. 118). Furthermore, "a given [manager] in a given environment does not continually engage in the same work. His job varies according to many situational factors such as annual budgeting requirements, periodic expansion programs, or major periods of crisis" (p. 122).

Other factors affecting managers include increased managerial experience and changes of social norms. Mintzberg (1973) identified two key trends among shifting social norms: the first is increased democratization of organizations, and the second is the increasing size and complexity of the power system which controls these organizations (p. 126).

'Managerial Work' Defined

In his classic review of the work of executives, Barnard (1938) wrote that "the function of executives relate to all the work essential to the vitality and endurance of an organization. . ." (p. 215). More recently, Mintzberg (1973) reported that "managerial work is enormously complex, far more so than a reading of the traditional literature would suggest" (p. 5). Allen (1973) and Welte (1978) distinguished between 'technical' work and 'managerial' work. The former is applied directly to resources and is **not** universal, while the latter **is** universal (Allen, 1973, p. 62).

Often, however, the literature covers the **functions** of 'management' and 'leadership' as identical or at least as the two sides of the same coin. This is a contentious issue which, as noted below, still begs resolution.

Hersey and Blanchard (1982), for example, see the two topics as separate. They stated that "in essence, leadership is a broader concept than management. Management is thought of as a special kind of leadership in which the achievement of organizational goals is paramount. Leadership occurs any time one attempts to influence the behaviour of an individual or group, regardless of reason" (p. 3). Welte (1978) agreed: "The essence of managership is coordination, while the essence of leadership is followship" (p. 630).

Bennis (1989) was adamant about the difference between managers and leaders. He wrote: "I tend to think of the difference between leaders and managers as the differences between those who master the context and those who surrender to it" (p. 44).

Ogilvie (1977) disagreed. He studied the behaviour of deputy principals in Australia's school system and identified leadership, teaching, and clerical duties as the key functions of these individuals.

While the arguments over management's definition and practices persist, "in the last analysis management is practice. Its essence is not knowing but doing. Its test is not logic but results" (Drucker, 1974, p. xiv). This, in turn, "requires, first, that managers know their discipline. It requires that they know management" (Ibid., p. 808). That leads to the next question: What are the key general functions which comprise the role of "management"?

General Management Functions

What Are 'Management Functions?'

Much of the literature on management attempts to place management functions into tidy little categories. There are many of them, some which are consistent with the 'general trend' while others add or delete certain functions depending on the orientation of the writer. A similar situation exists in the literature about the nature, or essence, of management functions and 'behaviour.' Both aspects are illustrated below, with the latter aspect discussed first.

The Essence of Management. The Royal Bank (1970) stated: "If there is any managerial imperative it is summed up in three words: awareness, action, responsibility" (p. 1). Barnard (1938) stated that "the executive functions serve to maintain a system of cooperative effort. They are impersonal. The functions are not, as so frequently stated, to manage a group of persons" rather the outcome of their performance (p. 216). He added that the exercising of the general executive process "involves the sense of fitness, of the appropriate, and that capacity which is known as responsibility - the final expression for the achievement of cooperation" (p. 257). He noted that this executive behaviour "requires not merely conformance to a complex code of morals but also the creation of moral codes of [and for] others" (p. 279).

Plumptre (1987) stated that "the deputy minister functions 'like a hinge between the political world and the administrative world' " (p. 377). Given that environment, he noted that "what the [Canadian] civil service has traditionally valued above all else is that ephemeral quality called judgement. Judgement is . . . to see to the heart of an issue" and to take appropriate action (p. 383).

The functions of management. Mintzberg (1973) identified seven different 'schools of management.' These are the: classical, great man, entrepreneurial, decision theory, leader effectiveness, leader behaviour, and work activity schools. Henri Fayol, the father of the classical school of management, introduced in 1916 a framework for management functions. He "divided a manager's duties into five primary functions: (1) planning, (2) organizing, (3) commanding, (4) coordinating, and (5) controlling" (Rausch, 1984, p. 26). Hersey and Blanchard (1982) stated that "the managerial functions of planning, organizing, motivating, and controlling are considered central to a discussion of management by many authors" (p. 3).

Barnard (1938) noted that "the essential executive functions . . . are, first, to provide the system of communication; second, to promote the securing of essential efforts; and, third, to formulate and define purpose" (p. 217). This 'purpose' included the organization's objectives and ends (p. 231).

Bassett (1972) stated that the management process included planning, organizing, staffing, directing, controlling, and policy making in operational areas (p. 86). Furthermore, he identified management practices as planning, organizing, staffing, motivating, directing, and controlling (p. 86).

Anthony (1981) declared that "management consists of two very basic functions: decision making and influence. The essence of managerial work is to make decisions and see that they are carried out" (p. 3). Similarly, Plumptre

(1987) noted that "in principle, the DM's [Deputy Minister] position comprises four elements: policy advice, expenditure planning and control, organizational leadership, and special assignments on behalf of the collectivity" (p. 397).

"As commonly thought," wrote Mintzberg (1973), "much of the manager's work is challenging and non programmed. But every manager has his share of regular, ordinary duties to perform . . ." (p. 4). Mintzberg (1989) noted that the key responsibilities of managers included: to manage stability, to detect discontinuity of patterns of activity, to know their business, to manage patterns, to reconcile change and continuity (pp. 39-42). He emphasized that "one of the more important things managers do is make strategy for their organizations, or at least oversee the process by which they and others make strategies" (p. 25).

Berg (1984) established a lengthy list of factors for which managers are generally responsible. He stated that

> the general manager is responsible for the establishment of long-term objectives for the company that are both challenging and attainable. . . . for the development of supporting plans that will contribute to the accomplishment of the overall objectives selected. . . . for the resolution of the inevitable conflicts that arise and trade-offs that must be made in many of the activities of the organization. . . . The general manager is the leader of the organization and is responsible for the selection , development, motivation, and fair treatment of its members. . . (pp. 6-7).

Ogilvie (1977) identified three main types of behaviour of deputy principals in Australia. They are: leadership, teaching (or, teacher-classroom contact), and clerical (or, school management and maintenance). Under the title of 'leadership' he included consideration, classroom facilitation, staff utilization, school management-tone, and routinization (pp. 101-102).

Drucker (1974) noted that "there are three tasks, equally important but essentially different, which management has to perform . . . to make its contribution: [creating] the specific purpose and mission of the institution . . . making work productive and the worker achieving; [and] managing social impacts and social responsibilities" (p. 40). He added that "a manager has two specific tasks. The first is creation of a true whole that is larger than the sum of its parts" (p. 398), and the second is "to harmonize in every decision and action the requirements of immediate and long-range future" (p. 399). Bennis (1989) had said the same thing about 'leaders.'

According to Certo and Applebaum (1983) management involves four functions: planning, organizing, influencing and controlling. They stated that all four functions are interrelated "because the performance of one depends upon the performance of the others" (p. 11).

Hersey and Blanchard (1982) stated that "according to Ichak Adizes, [1980] four managerial roles must be performed if an organization is to be run effectively. These four roles are producing, implementing, innovating, and integrating" (p. 7). The 'producing' role aims to achieve results, the 'implementing' role is to ensure that the system works appropriately, the 'integrating' role relates to the integration of individual and organizational strategies, and the 'innovating' role is the creative function of the job. Hersey and Blanchard (1982) concluded that "few managers fill perfectly all four of these roles" (p. 8).

Stewart (1967) defined five basic management job profiles: (1) the emissary who deals with outsiders, (2) the writer, (3) the discusser, (4) the trouble shooter, and (5) the committee member (Mintzberg, 1973, pp. 207-208).

Mintzberg (1989) had a word of caution, however, for all those who in their search for understanding of management practices, adhere too closely to theory. He stated that "if you ask managers what they do, they will most likely tell you that they plan, organize, coordinate, and control. Then watch what they do. Don't be surprised if you can't relate what you see to those four words" (p. 9).

Mintzberg (1973, 1975, 1989) suggested his own framework of managerial functions which included a set of three 'roles,' each with its own set of specific functions/activities. These he grouped as follows: **Interpersonal roles** including the figurehead, leader, and liaison functions; **Informational roles** with the monitor, disseminator, and spokesman functions; and **Decisional roles** including the entrepreneur, disturbance handler, resource allocator, and negotiator functions (1973, p. 59; 1975, p. 55).

Sergiovanni and Starratt (1988) stated that when replicated, Mintzberg's (1973) model of management with three roles and ten functions (as stated above) seems to "categorize the nature of managerial work in a variety of fields" including education (pp. 27-28). However, Sergiovanni and Starratt (1988) also criticize Mintzberg's (1973) model because it implies equal weight and impact on quality and effectiveness. They suggested that these functions are **not** of equal value.

It should be clear by now that theories of management are neither all-inclusive, nor universal. Each approached the topic area and its practice from very unique points of view leaving practitioners to wonder about the holistic view of management. Allen (1973) attempted to correct this dilemma and put order in the study of management. He proposed a taxonomy of management functions along the following structure: **Class** of work (e.g., mechanical, electrical, chemical, genetic, human work, etc.); **Order** (including management and technical work); **Function**; **Activity**; **Segment**; and **Element** (p. 47).

According to Allen's (1973) taxonomy nearly 80% of all management activities were listed under the headings of 'function' and 'activity.' Under 'function,' for example, were listed planning, organizing, leading, and controlling. Under the function of 'planning' were the following activities: forecasting, developing objectives, programming, scheduling, budgeting, developing procedures, and developing policies (p. 50).

Allen's (1973) taxonomy is useful in gaining an understanding of the actual activities of management from an holistic point of view, with critical linkages, as well as the detailed view of specific 'elements' of each 'segment.'

Another useful model of management was that presented by Mackenzie (1969). His circular model illustrated the various elements, tasks, functions, and activities of management as they related to each other in a somewhat continuous fashion. This model seemed to integrate much of the literature into a singular model.

The Universality of Management Functions

Inevitably, research into the functions of management, raises the question: "Are management functions universal?" Briefly, the response is "it depends!" With many conflicting views and postulations on the matter, a response to the above question depends on the management philosophy which one accepts and follows.

Koontz and O'Donnell (1968) believed that management functions **are** universal. They argued that "acting in their managerial capacity, presidents, department heads, foremen, supervisors, college deans, bishops, and heads of governmental agencies all do the same thing. [Namely], as managers they are all engaged in part in getting things done with and through people" (p. 54).

Drucker (1974) concurred. He stated that "management, that is, the organ of leadership, direction, and decision in our social institutions, and especially in business enterprise, is a generic function which faces the same basic tasks in every country and, essentially, in every society" (p. 17). Mintzberg (1973) also agreed with that premise. He wrote that "manager's jobs are remarkably alike. [These] can be described in terms of ten basic roles and six sets of working characteristics" (p. 4). These statements supported Bassett (1972) who noted earlier that "the research into management practices across different nationalities and cultures indicate similar elements and practices of management" (p. 86).

Costin (1970) conducted a survey of middle managers from government and business. He "found not only that both groups described their work as comprising all [of Mintzberg's] ten roles, but that there were no significant differences between the two groups in the rating of the importance of nine of the ten roles. . . ." (Mintzberg, 1973, p. 108).

Mintzberg (1973) explained the above finding by stating that "managers at all levels perform common roles but with different emphasis" (p. 113). He added that "a number of conclusions appear frequently in the literature. Moving down the hierarchy, the [manager's] job becomes more structured, the 'real-time' roles assume more importance, and some of the characteristics are more pronounced" (p. 109).

At the same time, however, Mintzberg (1973) acknowledged that there are other differences among managers. He noted that "the greater part of the evidence on differences in managerial jobs relates to features of the job itself - namely, the level in the hierarchy and the function supervised" with the manager's function accounting "for more variation than any other factor" (p. 109). Mintzberg (1973) also noted that "the size of the overall organization appears to have a considerable effect on what its senior managers do" (p. 104).

Mintzberg (1973) highlighted another potential reason for differences among managerial jobs and functions--the job's orientation. He noted that "although I have found no support for the contention that managerial jobs at different levels differ in kind, there is considerable evidence that they differ in orientation" with managers at the lower levels of the organization being more involved with the day-to-day operations of their organization (p. 110).

Another account for the variation in functional duties relates to specific functional area of the manager (Mintzberg, 1973). "Aguilar (1967) found that 'executives in the same functional area appeared to exhibit notably more similar profiles . . . than do executives at the same level in the hierarchy'" (Mintzberg, 1973, p. 114).

However, there are some researchers who believe strongly that managers are not interchangeable. Plumptre (1987) stated that "there is increasing emphasis on the importance of ensuring that managers know the substance of their organizations' work" (p. 380). Kotter's (1982) study debunked the notion that a 'generalist' business manager can step into any function of management and manage it effectively. He concluded that "putting someone in a GM [General Manager's] job who does not know the business or the people involved, because he is a successful 'professional manager,' is probably very risky" (p. 166).

Required Management Skills

To better understand 'management work' one needs to understand 'who is a manager' and 'what is it that a manager does.' Just as important, though, is an understanding of the skills required by the manager to perform these functions. In other words, how are management functions to be performed?

Katz (1955, 1974) identified three broad primary skills which are required by successful managers. He titled these skills as technical, human, and conceptual (1974, p. 91). Each level of management--supervisory, middle, and top--is required to demonstrate all three skills **but** to varying degrees. As managers move up the organization level they are expected to perform or demonstrate fewer and fewer 'technical' skills, **and** more and more 'conceptual skills.' The requirement to demonstrate 'human' skills, or the "ability and judgement in working with and through people" remains constant (Hersey & Blanchard, 1982, p. 6).

Berg (1984) explained that "managers work through and depend upon the skills and knowledge of other people," consequently, the higher managers rise in their organization the less they can do the technical aspects of the job by themselves (p. 8). Anthony (1981) stated categorically: "Managers should not perform operative work; instead they should plan, organize, control, lead, motivate, communicate, reward, and so on. Managers should avoid the actual carrying out of the task being managed" (p. 288).

Anthony (1981) proposed his own model of the management process which is based on 'decision making.' Accordingly, a manager's function is to plan, organize, staff, direct, and control decisions (p. 5). He also illustrated the type of topic issues on which managers may make decisions. Under 'planning,' for example, are setting goals, determining paths, and scheduling. Under 'organizing' are the activities of determining structure and allocating resources (p. 9).

Green, Krippen and Vincelette (1985) listed a number of managerial activities which they claimed are the key skills of managers:

> Motivating, delegating, evaluating performance of subordinates, setting goals with subordinates, interviewing, giving direction/instructions, disciplining, coaching, counselling, terminating subordinates, planning, clarifying communications, listening actively, building self-confidence, handling conflict, giving positive reinforcement, taking initiative, coping with stress, problem solving, [and] managing time (p. 56).

Kotter (1982) viewed the categories of management functions differently. He stated that "it is hard to fit the [General Manager's] behaviour into categories like 'planning', 'organizing', 'controlling', 'directing', 'staffing' and so on" (p. 159). He added that if one tried to force fit the actions of managers into these categories two observations would surface. The first would be that when managers perform 'planning and organizing' functions, they do so unsystematically. Second, that much of the typical manager's behaviour may be classified as a separate classification--as "none of the above" (p. 160).

Sergiovanni and Starratt (1988) described 'supervisors' in educational settings and noted that the 'supervisory' process contained the following activities: planning, organizing, leading, helping, supporting, developing (staff and self), and evaluating (p. 22). Drucker (1974), on the other hand, suggested that "there are five basic operations in the work of the manager. A manager . . . sets objectives

. . . organizes . . . motivates . . . communicates . . . establishes yardsticks . . . [and] develops people, including himself" (p. 400).

Sayles (1979) concluded that to fulfil their demanding responsibilities managers require specific interaction skills. These skills include the ability to use initiative, initiate contacts quickly, persevere, remain flexible, dominate when being interrupted, listen effectively, and overcome stress (pp. 225-226).

Mintzberg (1973) developed a set of eight skills which included the ability to: work with peers, lead subordinates, resolve conflict, process information, make decisions in ambiguous situations, allocate resources effectively, be entrepreneurial, and be introspective (pp. 189-193). Following his study he concluded that the activities of managers "are characterized by brevity, variety, and fragmentation" (p. 31). Mintzberg (1976) also found that managers "actively exhibit a preference for interruptions in their work [flow] . . . [and] lack of routine in their work" (p. 54).

Anthony (1981) suggested that managers must perform the following essential activities: goal setting, leadership, problem solving and decision making, communications, coaching and counselling, managing change and conflict, being political, managing time, and evaluating and rewarding employees (p. 36).

The Making of an Effective Manager

The extensive advice which managers--novice and experienced alike--are offered about their profession may likely overwhelm some, confuse some, and scare many others into inaction. Yet, despite the abundance of literature on management related topics the problem--lack of clarity--remains. The literature employs various terms interchangeably and addresses the topic of management either in minute detail--so as to exclude specific groups of 'managers'--or, in such broad scope that its information is barely applicable.

Drucker (1974) provided hope for management students. He noted that "what a manager does can be analyzed systematically. What a manager has to be able to do can be learned (though perhaps not always taught)" (p. 402). Mintzberg (1976) added that "clearly, the manager does not operate in a systematic, orderly, and intellectual way . . . as he analyzes his problems. Rather he deals with issues in the context of daily activities. . . ." (p. 55).

Furthermore, for managers to be successful they need to be able to think holistically. "No management process is more demanding of holistic, relational, gestalt thinking than the formulation of creative, integrated strategy to deal with a complex, intertwined environment" (Mintzberg, 1976, p. 57). Blake (1990) wrote that "perhaps the creative manager's most valuable skill is the ability to recognize that one operates in the fullness of time and not in the heat of the moment" (p. 43).

Adizes (1976) identified four key roles which managers need to fill in their duties. However, he concluded that

> Few managers fill perfectly all four of these roles. . . . Thus, to discuss the role of THE manager, as is done in management literature, is a theoretical mistake. No one manager can manage alone. It takes several to perform the process adequately, several people to perform roles which seem to be in conflict but really are complementary (In Hersey and Blanchard, 1982, p. 8).

Berg (1984) noted that the General Manager needs the rare ability to achieve the following:

> To lead effectively organizations whose complexities he can never fully understand, where his capacity to control directly the human and physical forces comprising that organization is severely limited, and where he must make or review and assume ultimate responsibility for present decisions which commit concretely major resources for a fluid and unknown future (pp. 5-6).

Kotter (1982) identified the issue in a slightly different manner. He noted that "the two most fundamental challenges facing General Managers are: figuring out what to do despite uncertainty, great diversity, and an enormous amount of potentially relevant information, [and] getting things done through a large and diverse set of people despite having little control over most of them" (p. 160).

It all sounds so onerous and complex. For simplicity's sake, a student of 'management' is encouraged to keep in mind the fundamental raison d'etre of management and managers. "Managers help set organizational and unit goals and efficiently marshal human, financial, physical, and informational resources to effectively achieve them" (Anthony, 1981, p. 3). The rest may be summed up under the banner of 'it depends.' Namely, the specific activities would have to be tailored to the specific situation, its environment, and its requirements.

How does one get to become an effective and efficient manager? Through the learning of the various theories of management and of the management related topics. Ultimately, good managers understand themselves and their own unique environment. Bennis (1989) noted that "leadership is first being, then doing" (p. 141). He added that "leaders have nothing but themselves to work with" (p. 47) and that "leaders learn by leading, and they learn best by leading in the face of obstacles. As weather shapes mountains, so problems make leaders" (p. 146). That which applies to leaders also applies to managers.

Mintzberg (1989) noted that managers' "effectiveness is significantly influenced by their insight into their own work. Their performance depends on how well they understand and respond to the pressures and dilemmas of the job" (p.22)

Summary of Chapter 2

This chapter contained a review of the literature on general management practices. This review included a discussion of key definitions, management functions, required management skills, and the making of an effective manager. It serves as an initial basis for the conceptual framework.

CHAPTER 3

Literature Review:
Crises as a Unique Management Environment

This chapter contains a review of the environment wherein crisis management is practised. This review begins with an examination of the definitions which are used to describe crises and disasters. These definitions are followed by descriptions of the impact of these events on individuals and organizations. The latter description is further sub-divided to permit a separate review of critical management concerns such as communication, coordination, personnel, material resources, and decision making.

Grappling With Definitions

Imagine extraordinary events which present major threats to human and community survival and consequently demand extreme human effort and perhaps sacrifice. What title would you provide these unusual events?

The literature on this topic is rife with various definitions of "disasters", "emergencies", "catastrophes", and "crises." As noted below, their diversity may be explained by differences in terminology and orientation.

Drabek and Hoetmer (1991) stated that emergency management in the United States is based on three major streams: civil defense programs, natural disaster responses, and research in the field of behavioral sciences. Petak (1985) lamented that "the primary focus of research in the emergency management area has been in the general area of human response and the application of technological fixes" (p. 3). He added that "public administration, as a discipline, has generally neglected to consider emergency management within the mainstream of its activities" (p. 3).

Rosenthal, et al. (1989), on the other hand, noted that there are **two** major orientations in the field of management of out-of-the-ordinary. One such orientation is focused on "disasters" and is typically viewed from a sociological perspective. The other is focused on "crises" which are typically analyzed from an organizational behaviour perspective. Both perspectives are critical to better understanding of this unique style of management.

Rosenthal, Hart and Charles (1989) preferred to use the term "crisis" as an all-encompassing term. They noted "that a similarity can be acknowledged between various categories of out-of-the-ordinary circumstances, one can view disasters, riots, and terrorist actions equally as crises" (p. 9).

Drabek (1986) cautioned that "some aspects of responses to man-made and technological disasters can be integrated within the conclusions from natural disaster research.

[However], the analytic criteria that should guide such integration remain unclear. . . ." (p. 6).

Defining 'Crises'

According to Fink (1986) crises are analogous to major illness in the human body. "There is no question that a crisis is a disease and should be treated as such. Moreover, it should be viewed and regarded as a communicable disease" (p. 80). He argued that "it can be a fatal mistake to think that a crisis, if left unattended, will heal by itself. A crisis should be viewed as highly virulent - and should be treated accordingly" (p. 80).

Fink (1986) provided a strong caution to (crisis) managers everywhere. "A crisis in business can occur today with little or no warning, anywhere, anytime. And it can happen to any company, large or small, public or private. It is . . . the safest of assumptions that a crisis looms on the horizon" (p. 1). He also added the following warning: "Beware and be advised: crises historically evolve in cyclical fashion and a crisis sufferer almost never has the luxury of dealing exclusively with one crisis at the time" (p. 25). However, "crises need not be the seemingly uncontrolled and uncontrollable events that their victims too often allow them to become" (p. 2).

Barton (1993) observed that "a crisis is a major, unpredictable event that has potentially negative results.

The event and its aftermath may significantly damage an organization and its employees, products, services, financial condition, and reputation" (p. 2). He distinguished between crises and problems. He noted that "problems can be addressed in a *limited* time frame without arousing public attention and without draining the human resources of an organization" (p. 2).

Rosenthal, Hart, and Charles (1989) concurred with Fink (1986). They noted that a crisis is "a serious threat to the basic structures or the fundamental values and norms of a social system, which - under time pressure and highly uncertain circumstances - necessitates making critical decisions" (p. 10).

Rosenthal, et al., (1989) noted that the typical dichotomy of disasters as either natural or man-made is not comprehensive enough to allow greater discussion and understanding (p. 439). They recommended a general concept of "crisis" which they "put forward as an encompassing framework for analyzing a highly diverse range of situations through a single, coherent perspective" (p. 436).

Shrivastawa (1989) stated that "the fundamental lesson of the Bhopal disaster is that such crises are caused by simultaneous and interacting failures within hazardous technological facilities and their environment" (p. 113). He noted that these environments included the technology in use, organizational policies, human judgement, regulatory system, infra-structural facilities, and even the public emergency preparedness organizations. All of these, he concluded, added to the nature of the disaster.

Nudell and Antokol (1988) expanded the above list of crises to illustrate that crises were not necessarily restricted to the realm of "technology". They noted that such political activities as "strikes, demonstrations, and other actions can result in the disruption of normal operations of an organization even if they are peaceful and orderly" (p. 13).

Environment Canada (1991) also defined crisis from a political perspective. It noted that Privy Council's Office (PCO) has formally defined a crisis as:

> A period of danger for the government, resulting from a natural or man-made mishap, debacle, or disaster. A crisis need not pose a serious threat to human life, but it must somehow challenge the public sense of appropriateness, tradition or values, safety or security in a way that threatens the integrity of the government (p. 44).

Accordingly, crisis management is the depoliticization of the situation. In other words it is "the process of returning an event to a near normal daily activity unworthy of special attention" (p. 50).

PCO (n.d.) also viewed crises from their political perspective. It noted that although crises often connote visions of threat to lives and property, they also have a political component. Therefore most often "public service managers will have to deal with crises that relate more closely to their everyday area of responsibility, e.g., the delivery of programs, the application of regulations, the interpretation of policy" (p. 1). It also noted that "crises are inevitable" (p. 5) and that "a crisis is a crisis in large part because it emerges as if from nowhere and challenges our sense of what is normal and well-managed" (p. 3).

Hart and Pijnenburg (1989) related the events leading to and occurring during the Heizel Stadium disaster (May 29, 1985) in Brussels, Belgium. They noted that the disaster which occurred during the World Soccer Championship "can be viewed as a crisis situation. At a staggering speed public authorities were confronted with a severe threat, debilitating uncertainty, and highly urgent problems" (p. 212).

Rosenthal, Hart, and Charles (1989) stated that the research into disasters and crises reveals that they often contain elements of both natural and man-made contingencies (p. 11). They noted that:

> One can remark that crises are in the eyes of their beholders: if individuals (and the media) define a situation as a crisis, it is a crisis in its consequences. Yet, what certain groups within society call a crisis may be perceived as a welcome opportunity for inducing change by others (p. 13).

By their definition, crises must contain a hazard or a degree of serious threat to people and their environments--social, political, organizational, and natural. Mileti, Drabek, and Haas (1975) defined hazard as "a potential set of events; [while] disaster is a descriptive label for what is happening or has already taken place" (p. 4). Rosenthal, et al., (1989) wrote that the term "threat is best conceived as a subjective and differential notion" (p. 442). Making reference to the numerous crises which they recounted, they recommended that the definition of "threat" be broadened to include self-initiated and planned threat.

Yet, for all their "threat" and subsequent damage, crises also have a constructive side to them. Rosenthal, Hart, and Charles (1989) noted that "crises have been aptly phrased 'occasions for decision.' They require critical decisions under conditions of uncertainty and time pressure" (p. 17). These decisions may lead to opportunities to make things better. Barton (1993) observed that "some managers use crisis to their advantage--their swift and effective decision making may save millions of dollars in lost revenue and preserve their company's reputation" (p. 3).

Fink (1986) noted that crises bring with them many often forgotten opportunities. He stated:

> Be aware that the crisis, the turning point, holds out to you the potential for achievement; for obtaining your personal or business goals; for achieving admiration from your peers and for receiving admiration from your peers and subordinates, and praise or promotion from your superiors; for facilitating self-enhancement and for moving up (p. 133).

Rosenthal, Hart, and Charles (1989) noted that "most crises are pivotal social and political events. . . .

Disasters, due to their dynamic nature, have the potential of affecting the social and political fabric of a community, a nation, or the world community in either the short or long run" (p. 22). They also noted that crises are a great deal more than an abstract phenomena and defined crises as follows:

> Crises have been depicted as situations of extreme collective stress. Note that this is not just another abstract sociological or psychological notion. It stands for such imperative phenomena as the prompt overloading of the communication channels, the massive invasion of volunteers on the scene of the crisis, the spreading of rumors, the seemingly irrational aversion of the population to smoothly organized professional relief, and immediate allegations concerning who is to be blamed, and who is taking advantage of the emergency situation (p. 16).

Defining 'Disaster'

The term 'disaster' may also mean different things to different people, and consequently may be easily misunderstood. Dynes (1970) noted that the term 'disaster' may be given to a disaster agent (e.g., earthquake or hurricane), to the physical impact of that agent, to the evaluation of the physical event, to the social disruption created by the event, or to a combination of the above (p. 50). Furthermore, he identified at least ten various ways to categorize disaster agents. These included a range of factors from the frequency and predictability of the disaster agent, to its scope of impact and destructive potential (pp. 52-54).

According to Fowlkes and Miller (1988) "the classic disaster, whether man-made or natural, is a social phenomenon, a cataclysm that is recognized and measured by its physical and/or economic toll on human welfare" (p. 37). They noted that "the natural disaster is not a situational occurrence per se so much as the convergence of a set of conditions that give rise to a new definition of an existing situation" (p. 34).

Dynes (1970) viewed disasters from a sociological perspective. He noted that "a disaster is an event located in time and space, in which a community undergoes severe danger and incurs losses, so that the social structure is disrupted and the fulfilment of all or some of its essential functions is prevented" (p. 78).

Rosenthal, Hart, and Charles (1989) viewed disaster from a social as well as a political perspective. They included the element of risk potential in their definition of disasters and noted that while "most crises are pivotal social and political events . . . disasters, due to their dynamic nature have the potential of affecting the social and political fabric of a community, a nation, or the world community in either the short or long run" (p. 22).

The United States Federal Emergency Management Agency (FEMA) defined disaster as:

> An occurrence of a severity and magnitude that normally results in deaths, injuries, and property damage and that cannot be managed through the routine procedures and resources of government.

> It usually develops suddenly and unexpectedly and requires immediate, coordinated, and effective response by multiple government and private sector organizations to meet human needs and speedy recovery (Auf der Heide, 1989, p. 51).

La Plante and Kroll-Smith defined disasters as "crisis events, the occurrence and course of which are at least partially determined by decisions, actions, and too often, a lack of appropriate action well within human control" (pp. 134-135). Quarantelli (1985), however, cautioned that "a disaster is not simply a bigger everyday emergency" (p. 9), nor is it "simply a large-scale accident or emergency" (p. 3). He concluded that the management of disaster response is different from day-to-day management operations.

Withers (1988) discussed his experiences as Canada's Chief of the Defence Staff, and later as Deputy Minister of the Department of Transport. He noted that "it is very clear . . . that a major crisis and the handling of it can drastically affect the lives of parliamentarians, civil servants and the public at large" (p. 18).

Dynes (1970) noted that Barton (1963) "placed disasters in the category of collective stress which he defined as a 'large unfavorable change in the inputs of some social systems'." (p. 50). He included in this category various events such as natural disasters--hurricanes and earthquakes--as well as epidemics, depressions, terrorist activities, and urban decay. Drabek (1986) concurred with the above and stated that "disaster events include aspects of: (1) technological and man-made hazards; (2) natural disasters; and (3) internal disturbances, e.g., acts of terrorism" (p. 7).

Turner (1978) noted that there are a number of preconditions to a disaster. These include "organizational rigidities of perception and beliefs, decoy phenomena which distract attention from genuine hazards, a range of many types of information and communication difficulties associated with the ill-structured problem . . . , failure to comply with existing safety regulations, [and] a variety of modes of minimizing or disregarding emergent danger. . ." (Turner & Toft, 1989, p. 187).

LaValla, Stoffel and Erwin (1991) viewed disaster from a resource perspective. They defined disaster as an event "when the resources available are exceeded . . . " (p. 19).

Raphael (1986) noted that "perhaps the simplest [disaster] definition is that of Cohen and Ahearn (1980): 'disasters are extraordinary events that cause great destruction of property and may result in death, physical injury, and human suffering'." (p. 5).

Defining 'Emergencies'

According to LaValle, Stoffel, and Erwin (1991) an emergency is "an unexpected event involving shortage of TIME and/or RESOURCES which places life and/or property in danger, and which requires immediate response" (p. 19).

They noted that an emergency is an event slightly more complex than an accident. They defined an 'accident' as "an unpleasant and unintended happening that daily routine response can handle (daily 9-1-1 activities)" (p. 19).

Emergency Preparedness Canada (EPC) (1992) defined an emergency as "an abnormal situation in which, to limit damage to persons, property or the environment, prompt actin [sic] beyond normal procedures is required" (p. 1-1). Canada's *Emergencies Act* defines a national emergency as:

> An urgent and critical situation of a temporary nature that a) seriously endangers the lives, health and safety of Canadians and is of such proportions or nature as to exceed the capacity or authority of a province to deal with it, or
> b) seriously threatens the ability of the Government of Canada to preserve the sovereignty, security and territorial integrity of Canada
> and that cannot be effectively dealt with under any other law of Canada" (EPC, 1992, p.1).

Diagnosing 'Crisis' or 'Disaster'

As noted above crises, disasters, catastrophes, and emergencies all contain severe hazards and require extraordinary human response in the form of technological, individual, and organizational achievements. The generally agreed upon phases of disaster were stated by the Federal Emergency Management Agency (FEMA) as: Mitigation, Preparedness, Response, and Recovery (Petak, 1985).

Barren et al. (1982) developed a multi-dimensional typology of disasters employing the following categories: (1) degree of personal impact, (2) type of disaster, (3) potential for occurrence or recurrence, (4) control over future impact, and (5) duration. The result was a 32-possibility grid! (Raphael, 1986, p. 11).

Rosenthal, Hart and Charles (1989) noted that "the variety of crises is stunning. [And that] crisis analysts have been trying to impose order on this variety for years by developing typologies of crisis events" (p. 11). These efforts resulted in elaborated dichotomies such as natural versus man-made, consensual versus conflicting, or nuclear versus non-nuclear. They concluded, however, that "somehow these efforts have failed to cover the entire range of crisis events" (p. 11). Instead, they suggested a crisis typology which "is based on the distinction between two types of variables: those pertaining to the threat itself, and those pertaining to the perception of solutions held by the crisis participants" (p. 11).

Rosenthal, et. al. (1989) suggested a typology of crises "based on the dimensions of, firstly, foreseeability and extent of preparations; and secondly, the extent of volition involved in producing the crisis" (p. 446). Their typology produced the following categories of crises:

(1) Unimaginable crises,
(2) Neglected crises (e.g., Chernobyl and Bhopal),
(3) Unavoidable crises (e.g., Mississauga, Ontario),
(4) Compulsive crises (KAL and Challenger disasters),
(5) Wanted crises (e.g., the Ethiopian famine), and
(6) Wilful crises (as in the case of some riots etc.).

Rosenthal, Hart and Charles (1989) noted three key points in analyzing disasters. First, "crises differ according to the object of the basic threat" (p. 11). Second, "the domain of threat can be viewed in geographical terms: within a certain organization or building, local, regional, national, and international" (p. 13). Third, they noted that "the origins of threat can be either endogenous or exogenous to the system affected" (p. 13).

Fink (1986) proposed a Crisis-Plotting Grid on which one could plot out the potential of a crisis. The grid has two axes, a vertical "crisis impact value" axis and a horizontal "probability factor" axis. The two axes intersect to form four quadrants, each reflecting a separate degree of 'crisis' (pp. 42-45).

Fink (1986) also analyzed crisis from the perspective of private organizations. He suggested five factors to help these organizations determine the impact value of a crisis. These factors include: the ability of the crisis to escalate in intensity, the degree of scrutiny which the organizations (and the crisis) can expect from government or the media, the degree of interference in their normal operations, the degree of damage to the organization's positive public image, and the potential damage to their operational 'bottom line' (p. 42).

Perrow (1984) coined the term 'normal accidents.' He noted two major dimensions of socio-technical systems which predict and explain the occurrence of crises or 'normal accidents.' The two dimensions are the 'complexity' of a system and the coupling of its parts. 'Coupling' refers to how tightly (or loosely) are the system's components dependent upon and interrelated with each other. Perrow concluded that the more complex a system is and the tighter its coupling, the more one can anticipate it to have 'normal accidents' with devastating results.

Turner and Toft (1989) supported the general concepts of Perrow's 'normal accidents.' However, they also made reference to an 'incubation period' during which "crises and disasters develop unnoticed . . . [when] a cluster of elements . . . associate together in various combinations . . . to produce major accidents" (pp. 185-186).

Nudell and Antokol (1988) noted that "all emergencies fall within two broad categories: disasters and induced catastrophes" (p. 3). According to them "a disaster is an overwhelming ecological disruption occurring on a scale sufficient to require outside help" (p. 3). Induced catastrophes, on the other hand include a wide range of events from terrorism to general business emergencies.

Charles (1989) wrote that "the problem encountered when attempting to identify those elements that encouraged a disaster can at times not only be difficult, but improper emphasis on particular causes can occur" (p. 164). He noted that when emphasis is placed on technology, as it most often is, the risk is that the problem is seen to be resolved with a technical 'fix.' This, in turn, fails to acknowledge the effects which the formal and informal organization have on the problem and its solution.

In responding to crises, ultimately two 'truths' emerge. One, as noted by Fink (1986), is that "while a crisis may strike at the heart of a corporation or a family, it is always an individual who must have the heart - and the courage - to respond" (p. 1). The other is the realization that, given the magnitude of crises, the response efforts must eventually reach a level of complexity much greater than that required in day-to-day operations, requiring the resources, experience, and capabilities provided by organizations through organized response (Drabek & Hoetmer, 1991; Dynes, 1970; Quarantelli, 1985).

Furthermore, regardless of their categories, disasters typically have a number of predictable stages. Some may occur briefly while others may last for as long as years (Charles, & Kim, 1988). Dynes (1970) recounted the following stages (and functions):

> Warning (Precautionary activity), Threat (Survival action), Impact ("Holding on"), Inventory (Diagnosis of situation and decision on action), Rescue (Spontaneous, local, unorganized extrication and first aid, some preventive measures), Remedy (Organized and professional relief, medical care, preventive and security measures), Recovery (Individual rehabilitation and readjustment; community restoration of property and organizational preventive measures against recurrence) (p. 56).

Drabek (1986) described the stages as preparedness, response, reconstruction, and mitigation. "Preparedness" included both planning and warning about the disaster.

"Response" involved both the pre and post impact periods. The "recovery" stage included two parts: the "restoration" period of less than six months after the impact, and the "reconstruction" period which was longer than six months. The "mitigation" stage lasted for as long as necessary until individuals and "systems" were returned to normalcy.

More often than not, however, the accepted phases of disaster are defined by FEMA (Federal Emergency Management Agency) as preparedness, rescue, response, and mitigation.

The Impact of Disasters on Individuals

Disasters have many disruptive effects on both individuals and organizations. However, it is commonly agreed that it is individuals and not organizations who first respond to disasters (Anderson & Woodrow, 1989; Auf der Heide, 1989; Beare, 1980; Drabek, 1986; Dynes, 1970; Mileti, Drabek, & Haas, 1975; Quarantelli, 1978, 1982, 1985).

A prevalent attitude among disaster responders is of viewing themselves as 'rescuers' to the disaster's 'victims.' Raphael (1986) reported that "Short (1979) has shown how stereotypes attached to these roles [of victim and rescuer] may lead to a distorted polarization of the victim as weak, vulnerable, and helpless and rescuer or helper as all-powerful, invulnerable, and helpful" (p. 10). Both images are a myth and cloud the reality of disaster response activities (Auf der Heide, 1989; Drabek, 1986; Dynes, 1970; Quarantelli, 1985).

Raphael (1986) observed that "all who experience disaster are likely to be in some ways touched by it; they can never be exactly the same again" (p. 27). Individuals may be 'touched' by a disaster even before it strikes--during its 'warning' phase--and will definitely be affected by its impact phase or stage. She observed that conflicts regarding roles and priorities during that time create much stress for the individual.

Health and Welfare Canada (1990) reported that even disaster workers who typically function well in their jobs may be overcome by the disaster situation. It noted that "at times, the stresses experienced can overcome a person's natural defences . . . and the person is suddenly confronted with a tidal wave of painful events that cannot be handled through ordinary processes of adjustment" (p. 51). It reported that after a disaster "people gradually come to realize what has happened. Some cry and some get mad. Others feel confused and disorganized" (p. 92). Also, "several days after the event, some people feel nervous, have difficulty concentrating, suffer from insomnia, feel guilty or deny reality" (p. 92). These difficulties may be experienced by emergency response personnel as well as members of the public who experienced the disaster either first or second hand (Raphael, 1986).

Dynes (1970) reported on the finding of Killian (1952) who concluded "that the conflict most frequently faced by [individuals in a disaster] . . . was between the family and a variety of other units, most notably occupational and community loyalties" (p. 151). Other key conflicts included the individual choice between alternative disaster roles (e.g., fight the fire or save lives), between loyalty to one's organization or to fellow employees, and between loyalty to community or to extra community groups (Dynes, 1970, p. 152).

Bryn (1974) reported on a study conducted by Dynes and Quarantelli of over 3,000 staff members from various organizations, and of reports on the conduct of thousands of other workers during disasters. Their study "never found a [single] case where a person abandoned an important emergency-related responsibility because of anxiety" (p. 10). Quarantelli (1985) reported that disaster responders' role conflict--between disaster response duties and family related responsibilities--did "not result in the abandonment of, or failure to carry out occupational responsibilities" (p. 15).

Thompson and Hawkes (1962), on the other hand, reported that "organizational members whose families were not threatened are joined [on duty] by other organizational members only after their family obligations have been satisfied. . . . [They concluded, therefore, that] as the role conflict of organizational members increases, the ability of the organization to mobilize decreases" (cited in Mileti, Drabek, & Haas, 1975, p. 53).

Another persistent myth is that disasters bring out the worst in people. Direct experiences during disasters present a completely different view of human interaction. Williams (1970) reported that "well-documented humanitarian feelings surface with news of a nearby disaster" (cited in Drabek et al., 1981, p. 18). Victims of disaster often respond with actions of altruism (Auf der Heide, 1989; Bryn, 1974; Drabek et al., 1981; Dynes, 1970; Fritz, 1961). Quarantelli (1982, 1985) reported that crime rates usually drop and that exploitative behaviour is often rare during a disaster period. Looting is also rare during the impact period of disaster, and is often conducted by outsiders.

In spite of the disruptive effects of disasters "the overwhelming picture [in disasters] is one of human resilience; of suffering that is overcome through courage and fortitude; of altruism, and human endurance" (Raphael, 1986; p. 24). Panic is also rare during disasters (Auf der Heide, 1989; Dynes, 1970; Mileti, Drabek, & Haas, 1975; Quarantelli, 1982, 1985), because "both victims and nonvictims in disaster-stricken communities seek to 'normalize' the situation by using the same interpretative frameworks they use in their daily lives" (Drabek, et al., 1981, p. 8).

Quarantelli (1982) summarized individual responses to disasters as follows: "Those who experience disasters are not immobilized by even the most catastrophic of events. They are neither devoid of initiative nor passively expectant that others will take care of them and their needs" (p. 8). It is these individuals who on the one hand staff the disaster-response organizations, and on the other are served by them.

The Impact of Disasters on Organizations

While individuals are first to respond to a disaster, effective and sustained disaster response is more within the realm of organizations (Auf der Heide, 1970; Dynes, 1971; Quarantelli, 1982, 1985). Furthermore, "the greater the destruction, either of persons or property, the more organizationally relevant [disaster response] problems will be" (Dynes, 1970, p. 55).

Like individuals, organizations are greatly affected by disasters. For example, a tornado which kills community members may also kill needed staff members. A flood which destroys private homes may also wash away required public and organizational resources. An earthquake which paralyses phones and power lines may also neutralize critical FAX machines, computer links, and broadcasting equipment.

Furthermore, as Drabek et al. (1981) suggested, "too often, the emergency grows in complexity so swiftly that the ability to deal with all the responsibilities and functions is lost" (p. 279).

Rosenthal, Hart, and Charles (1989) observed that crises cause a dramatic change in bureaucratic organizations. They noted that among the key changes are: decision making becomes centralized, informal rules and improvisation become the modus operandi, bureaucratic politics flourish, the speed and volume of communication increases dramatically, decision makers prefer to rely on trusted sources, and problems emerge regarding the control of the flow of information (pp. 18-20).

Dynes (1970) noted that certain activities such as collecting information, control, and coordination are less obvious in a disaster and are often neglected. This neglect further aggravates the situation. Quarantelli (1982) suggested that the many problems faced by organizations in a disaster may be grouped into four categories: communication, coordination, authority, and personnel. Charles and Kim (1988) and Rosenthal, Charles, and Hart (1989) reported that the function of decision making is also critical. Each of these is discussed separately below.

Communication

Fink (1986) reported that in 1984 Americans transmitted approximately 976.4 billion messages via a variety of means. These included: "600 billion telephone calls, 250 billion interoffice memos, 125 billion first-class letters, 1 billion telegrams, Telexes, or facsimiles, 250 million electronic mail messages, 125 million priority-mail, overnight-courier letters and packages" (p. 99).

Rosenthal, Charles, and Hart (1989) wrote that "public agencies can be viewed as information processing systems" (p. 19). They added that:

> These systems determine what information is to be processed, and they entail standardized ways in which information is transmitted. They usually adapt themselves best to inputs that resemble previously processed information. They tend to be disposed to consume information that is easy to categorize, leaning towards so-called programmed decisions (p. 19).

Rosenthal, Charles, and Hart (1989) also stated that crisis information does not fit the above pattern of normal communication. Instead, they described crisis information as threatening, frightening, unfamiliar, new, surprising, unprecedented, critical, and ambiguous.

It is generally accepted that timely and accurate information is critical for effective decision making (Kepner, & Tregoe, 1975; Plunkett, & Hale, 1982). Charles, and Kim (1988), Fink (1986), and Rosenthal, Charles, and Hart (1989) reported on a wide array of disasters. They all agreed on the need of decision makers to have accurate information both before and especially during crises. As an example, when reporting on the crash of the Challenger, Charles (1989) noted that "it is quite clear . . . that crucial information did not reach important decision makers. Had the decision makers known [that information] . . . it is unlikely that the launch would have taken place" with such disastrous consequences (p. 156).

Fink (1986) suggested that in a crisis special communications may be required by a variety of groups. These may include employees, customers, investors, government and community leaders, insurance companies, lawyers, families of victims, and so on. He noted that each group may require its own special language and perhaps be approached differently. He added that "during a crisis you have an important message to communicate. But how that message is communicated is sometimes as important as the message itself" (p. 107).

Comfort (1989) specified that the role of crisis managers "includes designing a set of information processes that, even if incomplete, will increase the shared understanding of the problems and facilitate appropriate action by a wide group of participants" (p. 336). Rosenthal, Hart, and Charles (1989) agreed and wrote: "It is a key challenge for crisis managers to manage crisis information, and find ways to effectively link it up with decision making and implementation process" (p. 21). This is a difficult process fraught with many obstacles.

One of the limitations to the smooth flow of information in organizations may be the power games of managers. Mintzberg (1973) wrote:

> much of the manager's power derives from his information. With access to many sources of information, some of them open to no one else in his organizational unit, the manager develops a data base that enables him to make more effective decisions than his employees (pp. 4-5).

Mintzberg (1975) also noted that "verbal information is stored in the brains of people . . . thus the strategic data bank of the organization is not in the memory of its computers but in the minds of its managers" (p. 52). Mintzberg's comments gain greater significance in light of Raphael's (1986) observations on the impact of disaster on people's emotions and mental capacities. In other words, the minds of managers in a disaster must operate in less than ideal mental environment.

Addressing crises from their political implications, the Privy Council's Office (PCO) (n.d.) noted that "particularly in the early stages [of crises] there tends to be a natural resistance within an organization embroiled in a crisis to be forthcoming with information. This may exacerbate the perception that events are outpacing the response" (p. 7).

Rosenthal, Hart, and Charles (1989) observed that data processing in a crisis does break down. They reported that in a crisis "the processing of incoming information as well as the monitoring of outgoing information pose serious problems of controlling the information flow. Decision makers need to cope with a peculiar variety of overload and 'underload,'" both in incoming and outgoing communications (p. 20).

One of the often stated reasons for information overload in disasters is "convergence" (Auf der Heide, 1989; Dynes, 1970; Scanlon, 1990). Fritz and Mathewson (1957) identified three major types of convergence activity--personnel, information, and material resources. They reported that by far the most difficult to disentangle is the convergence of information which leads to information "overload".

Upon the onset of a crisis, organizations are usually unclear of the extent of the disaster, its impact on their human and other resources, the location of these resources, and the role which these organizations can play in communal disaster response (Auf der Heide, 1989; Dynes, 1970; Quarantelli, 1982, 1985).

Communication in the emotionally charged crisis environment is also a major challenge. On the one hand the situation is so overwhelming that concrete and complete information is lacking, and on the other there is a significant convergence of bits of information gathered to define a situation which is beyond immediate definition or comprehension (Auf der Heide, 1989; Drabek, 1986, 1991; Dynes, 1970; Quarantelli, 1985; Rosenthal et al., 1989). Furthermore, "since mobility into the impact area tends to be restricted so that personal reconnaissance becomes difficult, there is a tendency to accept [exaggerated accounts of the situation] as a factual description of what happened" (Dynes, 1970, p. 75).

Turner and Toft (1989) provide a typical example. They reported on the disastrous fire on August 23, 1973 at the Summerland Leisure Centre in Douglas, Isle of Man. They described the early stages of the event as follows:

> Communication intensified, volume and speed of communication possibly being increased in a fragmentary sense, but all of this was eventually of little avail. No time was available for searching out new information to deal with the crisis, and the events themselves induced a condition of information-overload in many of those involved (pp. 195-196).

Another example is Scanlon's (1990) documentation of the response to the mid-air collision over San Diego, California in September 1978. He reported that:

> Communications also proved to be a headache. Telephone circuits were saturated. Radio channels were flooded. The police site commander actually turned his radio off because the constant chatter of radio squawk was too distracting. Somehow media people got hold of the number of the radio phone located in the police command van. They tied up that line with calls (p. 114).

Quarantelli (1985) stated that communication problems which organizations experience in disasters are more the outcome of human error than equipment failure. He explained that "under normal conditions, the communication system is designed to process and exchange predetermined types and quantities of information. However, during a disaster, the number of staff using the communication system increases greatly" (p. 12) thus overburdening the system.

Drabek et al. (1981) found that "communication flow [in disasters] was surprisingly dense and to a large extent unregulated" (p. xix). Rosenthal, Hart, and Charles (1989) reported that "in crisis situations there is a considerable increase in the *volume and speed of upward and downward communications.* Time spending [consuming] procedures are set aside. High-level officials directly communicate with low-ranking bureaucrats" (p.19). Auf der Heide (1989) reported on the findings of Brunacini (1985), Dynes (1977), Killijanek (1979), and Stalling (1971). He stated that the difficulty with the information overload is that it forces those occupying communication and decision-making positions to perform a "communication triage. That is, they must filter out all but the most essential information to transmit. A problem can occur when the person filtering the information does not understand its significance to the overall disaster effort" (pp. 55-56).

Organizations experience at least five categories of communication problems in disasters. These communication categories are intra-organizational, inter-organizational, from the organization to the public, from the public to the organization (Quarantelli, 1982), and between systems of the organization (Quarantelli, 1985).

Intra-organizational communication. The entry point of information into an organization, its flow across the organization's hierarchies, and its utilization may all be altered by a disaster. Because of their physical proximity to a disaster site, or their special contact with response agencies, individuals may suddenly become their organization's information source and provide information in a non-routine manner. Due to the manner of its collection, and the pressure of the situation, such information may not be communicated to the appropriate people (Auf der Heide, 1989; Drabek et al., 1981; Dynes, 1970; Quarantelli, 1982, 1985).

Organizations also face the problems of a surge of regular but extra-shift staff and of volunteers who place added demands on the whole communication system--both on its hardware and its process (Quarantelli, 1982).

Inter-organizational communication. One of the major obstacles in inter-organizational communication is that disaster response requires organizations to communicate in unusual ways and with unfamiliar organizations (Dynes, 1970; Quarantelli, 1982), some of which emerged after the disaster's impact (Drabek, et al., 1981). Quarantelli (1982) noted that the more bureaucratic an organization is, in its normal communication, the more difficulty it will have shifting its communication patterns and adapting to the new environment of a disaster.

Pre-disaster inter-agency communications are typically between officials who are familiar with each other and during a period when time is available to develop this familiarity. However, disaster environments provide limited opportunity and time to get to know other individuals and organizations. This limitation hampers effective communication (Quarantelli, 1985). Auf der Heide (1989) stated that such communications are based on trust, which he recommended be developed prior to disasters.

Communications from organizations to the public. Disasters may force some organizations to communicate with the public in spite of their staff members' inability, lack of experience or disinterest in doing so (Auf der Heide, 1989; Beare, 1980; Dynes, 1970; Quarantelli, 1982, 1985; Withers, 1988). Quarantelli (1985) noted that an additional problem is the inability of organizations to understand during a crisis, what information is meaningful to the public and the manner in which that information should be communicated. He wrote that organizations are unable "to understand that what is meaningful information to organizational personnel is often not necessarily meaningful to persons in the endangered area" (p. 13). As an example, messages to the public are often stated in organizational expectations and requirements instead of addressing the public's individual needs and required activities (Quarantelli, 1982).

Communications from the public to organizations. Quarantelli (1985) reported that in a disaster people will often approach the more visible organizations (e.g., the police) and saturate them with requests for assistance or information. Sometimes, because people generally phone familiar and trusted organizations, their queries are made to organizations which either lack the desired information, or are unauthorized to release it (Quarantelli, 1982). In either case, the added stress to the internal communication system of the organization being queried may cause it to overload and break down (Auf der Heide, 1989).

Communication among systems. Disaster response often involves not only individual organizations, but the 'systems' to which they belong. A disaster involving casualties, for example, ultimately involves the health services and the social services systems. Communications between such systems is often more complicated and structured than the communication between organizations (Auf der Heide, 1989; Quarantelli, 1985).

The existence of 'boundary personnel' in organizations facilitates the transfer of information between organizations and systems. 'Boundary personnel' are those who are members of, or, have contacts with a number of organizations (Dynes, 1970; Quarantelli, 1985; Warheit & Dynes, 1969). These inter-organizational linkages help overcome the disruptive effect of a disaster on the formal communication system of the organizations involved.

Coordination

Drabek and Hoetmer (1991) defined coordination as "the cooperation of independent units for the purpose of eliminating fragmentation, gaps in service delivery, and unnecessary . . . duplication of services" (p. 57). They added that it "is vitally important during all four phases of emergency management: mitigation, preparedness, response and recovery" (p. 55). Comfort (1989) illustrated the importance of cooperation through her description of the response to the October 10, 1986 earthquake in San Salvador. She wrote: "An entire day of search and rescue was lost due to differences and misunderstandings in the coordination of the [rescue] process" (p. 331).

Environment Canada (1991) identified co-ordination as the "essential process which binds together all the arrangements that must function together to provide effective disaster response and management" (p. 4). It also noted that:

> the aim of 'co-ordination' as it applies to emergency preparedness and response is to bring together a number of disparate organizations in such a way that their skills and resources can be used in an effective manner to prepare for, respond to, or mitigate the effects of an emergency (p. 3).

Hoffman (1988), Emergency Preparedness Canada (1990), and Environment Canada (1991) emphasized that disaster coordination efforts must be focused on pre-set priorities, based on prior agreements, and serve as guide for action. Coordination efforts, they noted, regulate the response process and provide a degree of control.

However, the term "coordination" often means different things to different people. To some it may mean only the exchange of information relating to emergency response, while to others it may signal centralized decision making or centralized resource allocation (Quarantelli, 1985). Regardless, Drabek and Hoetmer (1991) observed that effective emergency management requires the coordination of five resources: "information, people, money, physical space, and equipment" (p. 63). Furthermore, according to Emergency Preparedness Canada

> Co-ordination includes the provision of policy guidance, leadership and the responsibility to bring together various players, and to lead them in a fashion that combines their expertise and resources to result in the achievement of national goals (p. 3).

Inter-agency coordination. "Routine emergencies create little demand for ongoing moment-to-moment coordination among the involved organizations" (Auf der Heide, 1989, p. 53). A disaster environment, however, is quite different. It requires "intense activities on the part of diverse organizations and brings together many people who had little contact with each other before the crisis" (Quarantelli, 1978, pp. 4-5).

Inter-agency coordination is almost always a problem in disasters because these events impose on organizations demands which cannot be met independently (Auf der Heide, 1989). Drabek and Hoetmer (1991) stated that "the larger the organization--staff, budget, and resources--and the greater the number and variety of its services, the greater its needs to interact with other organizations" (p. 6). "A disaster event reduces the autonomy of each organization since it no longer has the same control over its environment that it had previously" (Warheit, & Dynes, 1969, p. 12). Additionally, the disaster response of one organization typically has significant effect on the response efforts of another (Drabek et al., 1981; Dynes, 1970; Warheit & Dynes, 1969).

Drabek and Hoetmer (1991) observed that "organizations seek relationships with other organizations as a mean of coping with rapid change and uncertainty in the environment" (p. 61). They stated that this effort to establish new relationships is manifested through integration and coordination. They observed that although the two are often used interchangeably, they are different. "To integrate means to draw separate parts together into a unified whole. In contrast, to coordinate means to bring into common action or to harmonize" (pp. 57-58).

Quarantelli (1985) observed that during periods of disaster "organizations are forced into more and different kinds of interactions with other groups. The greater the number of contacts among organizations the more new relationships with other groups and organizations will be established" (p. 5).

Warheit and Dynes (1969) reported that there are two major types of interorganizational relationships in disaster situations. One is the exchange of resources; the other, the exchange of information. Drabek and Hoetmer (1991) observed that "the more complex the community . . . the more important it is to establish coordination" (p. 55).

Drabek and Hoetmer (1991) stated that coordination may be voluntary or mandated. It may relate to administration, personnel practices, planning and programming, and administrative support services. They added that "generally, administrative services are more difficult to establish than direct service linkages . . ." (p. 58). They identified a number of advantages for inter-organizational coordination. These included: "Financial stability, increased staff creativity, public support or perception of legitimacy, broader geographical representation, prestige, reduced fragmentation of services, continuity of services, [and] reduced duplication of services" (pp. 61-62).

In one sense disasters create a temporary unifying effect on groups and organizations. Individual differences and disagreements are often set aside during a disaster but resurface soon afterwards (Beare, 1980; Bryn, 1974; Dynes, 1970). Dynes (1970) wrote that "in every community there is a potential of conflict. However, during an emergency, community conflicts tend to be minimized" (p. 98). He accredited that phenomenon to the following: The existence of an external threat or agent, the presence of consensus on the need to act, a sense of urgency, the creation of a strong (community) identification, the focusing on the present, and the breakdown of social distinctions. Bryn (1974) noted that "disasters reduce status differences; they don't strike any one group. Hence, class, ethnic, and other status distinctions temporarily banish" (p. 10). However, organizations which band together to respond to a disaster, often revert to their more traditional roles and functions as soon as the initial threat of the disaster ceases to exist (Dynes, 1970). Quarantelli (1982) noted that "surface cordiality notwithstanding, organizations ... often have difficulty coordinating [their] diaster responses because they have different interests, tasks and goals" (p. 9).

Furthermore, due to their interdependence "coordination among the various interdependent responding organizations needs to be based on negotiation and cooperation" (Adams, 1981; Drabek, 1980, 1981, 1987; Dynes, 1981; Killijanek, 1981; cited in Auf der Heide, 1989, p. 77). However, this cooperation is fraught with obstacles, one of which--communication--was mentioned above.

Many coordination problems stem from failure to share information among agencies. "In disasters, communication difficulties are often hard to separate from coordination difficulties, and the greatest coordination difficulties are inter-organizational" (Auf der Heide, 1989, p. 79).

Another major obstacle to effective coordination is the vast number of agencies which are required and often involved in disaster response. The 1982 United States Census of Governments identified over 82,000 separate "governments" (Auf der Heide, 1989, p. 57). In a disaster, each affected government agency interacts with a multitude of private, public and volunteer organizations which bring their own procedures, values, and resources into the already chaotic environment of the disaster area. Some of these organizations may be "established" while others may be "emergent". Some may have direct emergency response focus while others may have no relevant experience in disaster response. Some may have credibility while others may not. Each of these factors influences significantly the cooperation among agencies (Auf der Heide, 1989; Dynes, 1970; Warheit, & Dynes, 1969).

Drabek et al. (1981) reported that "those who must manage a disaster response . . . are surprised at the number and diversity of groups who will arrive to help with their special expertise" (p. xviii). Rosenthal, et al. (1989) reported that in crisis situations

> different actors hold different perceptions stemming from differences in tasks, jurisdictions, education, geographic location, level of preparedness, and other political and administrative considerations. Consequently, decision makers and agencies are drawn into a crisis at different moments, from different points of view, and with different purposes. This diversity more often than not prevails upon attempts to

> coordinate or integrate crisis management efforts (p. 436).

Unfortunately, many organizations continue to operate independently and fail to coordinate their efforts within the overall response plan (Auf der Heide, 1989). Quarantelli (1985) wrote that even local agencies, such as fire and police, which normally work together may encounter difficulties in integrating their efforts in a disaster. He noted that this lack of coordination is based on three major problems: Lack of consensus on the meaning of coordination, strained relations caused by new tasks, and the difficulty of communicating at community level during a disaster. He concluded that "the greater the scope of a disaster and the greater the numbers of responders, the less is the likelihood of success of any overall organizational coordination" (p. 18). Efforts to bring about this coordination often lead to the establishment of martial law or the appointment of one or more agencies as central decision makers (Quarantelli, 1985).

Drabek and Hoetmer (1991) identified seven key obstacles to the coordination of community emergency response efforts. These are:

> The tendency of organizations to seek autonomy; Staff commitment to professional ideologies and work autonomy; Differences in organizational technologies and resource needs; Fear that the identity of the group or organization will be lost; Concern about the redirection of scarce resources; The proliferation of organizations and interest groups across multiple political jurisdictions; [And] differences in costs and benefits from participating in coordination (p.

58).

Hart and Pijnenburg's (1989) description of Belgium's Heizel Stadium disaster added another major obstacle--"bureaupolitics". It "manifested itself in two forms: (1) Subdued competition; and (2) non-contact. . . ." (p. 217). That disaster's response operation was further complicated by the struggle between two major groups: Those seeking the establishment of law and order versus those wishing to execute emergency relief tasks.

Warheit and Dynes (1969) observed that "inter-organizational relationships tend to occur most frequently between organizations that consider each other as being legitimate" (p. 12). Auf der Heide (1989) wrote that "when organizations have interacted and coordinated with each other *beforehand*, they have had fewer problems doing so in a disaster" (p. 82). At the basis of these relationship is the issue of trust. Comfort (1989) documented a number of disasters and concluded that "the factor of trust was crucial to action at each level of disaster operations, both by its presence and its absence" (p. 335). She also wrote

> Developing trust in disaster operations is an elusive task. It cannot be bought or forced. It can only be earned on the basis of demonstrated performance toward a shared goal. Under the urgent constraints of time and uncertainty characteristic of disaster operations, trust bridges inevitable gaps in information and facilitates action in this complex set of conditions (p. 336).

Drabek and Hoetmer (1991) observed that "several current trends are increasing the importance of coordinating community resources " in disaster situations (p. 55). Among these is the increasing complexity of disaster response. They reported that there are

> at least five factors [which] facilitate coordination: Shared goals and expectations about what the organizations will and will not do; Shared leaders or overlapping board members; Diversity of roles and interests; Similarity in technologies and resource needs; High rates of environmental change (p. 61).

Resource coordination. Coordination difficulties are not restricted to communication and inter-agency contacts, but also extend to material and human resources. Disasters often destroy some but not all locally available resources (Bryn, 1974). Additionally, a typical lack of information and "the atypical mode in which resources respond makes it difficult to tell what resources are present, where they are, what they are doing" (Auf der Heide, 1989, p. 63).

Another predictable complication for disaster response efforts is the convergence of material and human resources onto the disaster area (Fritz, & Mathewson, 1957). Kallsen (1983) noted that external organizations usually increase the pressure on the local, already weak, logistical system (cited in Auf der Heide, 1989). Jim Hoffman, Regional Director of Emergency Preparedness Canada, Alberta/NWT Region experienced this during the response to the July 31, 1987 Edmonton Tornado. He wrote:

> When an event draws national and international attention, a mass of resources often pours upon the scene, and often these are loaded upon volunteers or agencies not designed to cope with a mass assault. As a result, some volunteer agencies had to be reinforced

> by government support rather than vice-versa (APSS, 1991b, p. 36).

Scanlon and Sylves (1990) reported on the mid-air collision over San Diego in 1978. They wrote extensively about necessary resources which were wasted or unavailable, and about the outpouring of unnecessary resources which hindered the response operation. Referring to but one of many services, they wrote: "Emergency medical services proved to be extremely confused. A communications foul-up flooded the 727 crash site with ambulances, almost none of which were actually needed" (p. 111). Similar examples were reported by Charles, and Kim (1988), ECRU (1985, 1987), and Rosenthal, Charles, and Hart (1989).

Similarly to resource co-ordination, the practice of resource allocation in a disaster environment is drastically different from "normal times". In essence, the "boundaries between public and private goods and services [often] become blurred during disasters" (Quarantelli, 1985, p. 7) and budgetary controls are usually left till the post-disaster recovery period (Auf der Heide, 1989; Dynes, 1970; Quarantelli, 1978, 1985).

Authority and the Diversity of Decision Makers

During crises, both the pattern of decision making and the lines of authority are severely tested and altered (Dynes 1970; Drabek, et al., 1981). Rosenthal (1989) noted that the crisis which evolved during the inauguration of the

Dutch Queen Beatrix, on April 30, 1980, "simply corroborates the proposition that in crises ad hoc and situation-bound patterns override the formal organization" and its decision making patterns (p. 243). He reported that the major reason for the alteration of the normal pattern of authority and decision making is expediency!

Hart and Pijnenburg (1989) related the tragedy at the Heizel Stadium in Brussels. They noted that:

> Many important operational and tactical decisions were, as a matter of necessity, made by lower level officials confronted with acute problems and threats that left no time for consultation, or for decisions or orders from responsible command personnel. . . . (p. 215).

One crisis scenario after another reflects the same dilemma: front line individuals are left to respond to a rapidly expanding and chaotic situation, with little more than their experience and whatever [little] preparation which they may have for the crisis confronting them (Dynes, 1970; Quarantelli, 1985; Auf der Heide, 1989; Rosenthal, 1989; Rosenthal, et al, 1989; Turner & Toft, 1989).

One of the major factors which quickly becomes an issue in crises is that of centralization versus decentralization of decision making. According to Rosenthal, Hart, and Charles (1989) researchers "discovered evidence that suggests that some of the conventional wisdoms about centralization of decision making in crisis events may need to be revised" (p. 26). Turner and Toft (1989) stated the matter more directly and concluded that "centralization is not always helpful" (p. 195).

The issue of centralization versus decentralization is as relevant to intra-organizational procedures as it is to inter-organizational cooperative efforts. Furthermore, the often-time decentralization of decision making should not stifle or prevent joint decision making. Auf der Heide (1989) noted that "although it may not be obvious initially, the need for joint decision making eventually becomes apparent in most large disasters" (p. 77).

Organizations responding to disasters typically represent a variety of jurisdictions--federal, state, county, city, and private companies (Drabek et al., 1981). Their vague jurisdictional boundaries and overlapping roles and authorities are typically ignored in non-crisis periods. However, during disasters these jurisdictional issues surface with a vengeance and demand immediate resolution (Quarantelli, 1985).

It is not uncommon for organizations to lose some of their autonomy during crisis situations (Quarantelli, 1985). However, Dynes (1967) noted that as a result of the sharing of authority and decision making the overall response organization becomes a "much more efficient problem solving entity during the emergency period than it [was] during normal times" (p. 16). In effect, it becomes a "more rational problem solving entity. . . ." (p. 17).

Warheit and Dynes (1969) noted that "the emergency period is more likely to be [illegible] decision making based on what has to be accomplished even if legal limits have to be placed aside" (p. 13). Rosenthal, et al. (1989) presented a contradictory view. They reported the ever presence of bureaucratic politics throughout crisis management examples involving various scenarios. These disputes are often related to issues of authority or blame (Rosenthal, et al., 1989).

Quarantelli (1982) reported that authority problems during disasters are not the result of organizational breakdowns, or a grab for power by one group over another. Quarantelli (1985) also identified four predictable areas which affect organizational authority during a disaster: "(1) loss of higher echelon personnel because of overwork; (2) conflict over authority regarding new disaster tasks; (3) clashes over organizational domains between established and emergent groups; (4) surfacing of organizational jurisdictional differences" (p. 15). There are seldom disputes regarding responsibility for traditional tasks such a fire fighting, health care, and crowd control (Quarantelli, 1985). Rather, disputes occur over responsibility for new tasks such as mass burial or mass search and rescue operations (Auf der Heide, 1989; Quarantelli, 1985).

Command, coordination, and control in a disaster are difficult enough (Auf der Heide, 1989; Drabek, et al., 1981;

Dynes, 1970) without added obstacles. However, these obstacles may be part of a crisis manager's reality (Rosenthal, Charles, & Hart, 1989; Shrivastawa, 1989). Rosenthal, et al., (1989) noted that regardless of their nature, crises occasionally involve the "deliberate creation of uncertainty and the imposition of surprise" (p. 444).

Personnel

The imminent or actual impact of a disaster usually brings about the convergence of people onto the stricken area or into the facilities (e.g., hospitals, dispatch stations, command centres) of responding agencies (Drabek, 1986; Dynes, 1970; Fritz, & Mathewson, 1957; Quarantelli, 1985). Kartez and Lindell (1990) observed that convergence is typically "motivated by anxiety over missing kin and friends, sympathy for the stricken population and the desire to help it, and interest in an unusual or unfamiliar event" (p. 6). Fritz and Mathewson (1957) identified five types of groups based on their motivation to converge onto a disaster site. These include the returners, the anxious (for family and friends), the helpers, the curious, and the exploiters. Each group has an impact on the operation and each needs to be dealt with accordingly.

Quarantelli (1985) noted that "disasters free people from work, household, and school demands and/or the performance of daily tasks and responsibilities" (p. 10).

organizations, may also curtail activities which they consider non-essential, and may re-assign their staff to disaster response activities (Auf der Heide, 1989).

Organizations--their structure, reporting lines, roles, and responsibilities--are all greatly affected by a disaster. Off-shift personnel and volunteers are likely to converge on organizational sites adding pressure on an already confusing situation, and reducing the availability (in long-term operations) of rested and available staff reserve (Auf der Heide, 1989; Dynes, 1970). As an example, Scanlon and Sylves (1990) reported that in the 1978 San Diego air crash "over-convergence of police at the site was excessive, unnecessary, uncoordinated, and probably counter productive to recovery operations . . ." (p. 111). They also stated that "before long almost every on-duty San Diego police officer, and many who were off duty, were at the scene. . . . police dispatchers had almost no idea who was on-site [consequently] . . . there were just nine uniformed officers left to cover the rest of the city during the incident" (p. 111).

Organizational performance in a disaster is also greatly affected by vacancies in critical positions. These vacancies may be the result of lack of staffing, the death of staff members or their inability to arrive at the work site, or the transfer of the incumbent to another critical disaster response position within or outside the [illegible] (Auf der Heide, 1989; Drabek, 1986; Dynes, 1970; Quarantelli, 1982, 1985).

Organizations attempting to mobilize their human resources are confronted not only by the chaos of the aftermath but also by their need to expand and adjust their response to meet the situation (Dynes, 1970; Quarantelli, 1985). [illegible] (1970) suggested that the more centralized an agency's response to the disaster, the slower will its response be following the disaster (cited in Mileti, Drabek, & Haas, 1975). However, organizations which undergo rapid expansion and [illegible] of leadership, lose some of their "legitimacy" within their community (Warheit & Dynes, 1969).

Decision Making

The pattern of decision making in disasters is significantly different from that practised during non-disaster periods. Communication lines are often overloaded by an increasing number of information bits which travel faster, and often through novel routes. Information filtering occurs at all levels with widespread effects on decision making (Drabek, 1986; Dynes, 1970; Rosenthal, et al., 1989).

Hamblin ([illegible]) noted that in a crisis situation people allow their leaders more control over their lives. These leaders are then required to make decisions. Auf der Heide (1989) noted that during disaster situations "decisions have to be made urgently or lives and property are lost" (p. 56). Additionally, decisions are "often made in a maelstrom of activities and emotions" (Withers, 1988, p. 18).

Dynes (1970) reported that organizations do not react automatically to the increased demands which disasters impose on them. The predictable delays may be attributed to a number of factors including: Limited knowledge of the extent, magnitude, and evolution of the disaster; uncertainty regarding the status of organizational resources and response capabilities; and, uncertainty regarding the capability, intention, and resource deployment of other organizations. In other words, immediate response is ruled by uncertainty (Fink, 1986; Quarantelli, 1982, 1985; Rosenthal, et al., 1989). Yet, as Rosenthal, Hart, and Charles (1989) noted "crises may be viewed as 'occasions for decision'" and may also provide an opportunity to resolve an underlying organizational or environmental problem (p. 9).

On the other hand, the inherent threat of crises, coupled by the need to make decisions in an environment of uncertainty, generates much added stress (Charles, & Kim, 1988; Fink, 1986; Raphael, 1986; Rosenthal, et al., 1989). Mintzberg (1976) stated that the decision making process is profoundly influenced by 'dynamic factors'. He added that "essentially, managers are left on their own to deal with the dynamic factors, which involve simultaneous, rational modes of thinking" (p. 55). Fink (1986) stated that "effective decision making is a technique. High-quality decision making in the midst of crisis-induced stress is a process with mechanics to it" (p. 150). He added that managers must become familiar and practised at it.

Ritti and Funhouser (1977) wrote that decisions are "a process starting with an initial awareness of the need for some action and carrying through to the point of final evaluation and, if need be, reconstruction of the situation" (p. 238). In some instances this reconstruction of reality is due to what Janis (1982) had termed "groupthink". Rosenthal, Hart, and Charles (1989) observed that crisis decision makers can succumb to group think "whereby the preservation of group harmony and amiability between group members overrides the group's ability to critically assess decision problems, process strategic information, and intelligently choose a course of action" (p. 21).

As noted above, communication in a disaster is influenced to a great degree by trust. Additionally, "daily rules of executive conduct are not abandoned in crisis; instead selected values are heightened" (Drabek, et al., 1981, p. 18). Rosenthal, Hart, and Charles (1989) reported that crisis decision makers

> are inclined *to rely on trusted, and liked sources*. In conflict crises they may become completely consumed in closed communication circuits made up solely of allies, adherents, and friends. Paradoxically enough, potentially rewarding channels of communication are often closed off by strategies or tactics that are destined to isolate the opponents (pp. 19-20).

Rosenthal, Hart, and Charles (1989) also noted that crisis decision makers "tend to reduce uncertainty by supplementing sparse information with analogous data and arguments" (p. 20). They added that these decision makers are "inclined to refer to previous crises as a reference point and as a means to find stability in an unstable and uncertain environment" (p. 21). Comfort (1989) stated that such decision makers are "left to invent strategies out of past experience, available [and limited] knowledge, and creative insight" (p. 334). However, she also noted that action in crises "is most effective if it is based not upon previously defined rules, but on the best information available at the time" (p. 334).

Fink (1986) stated that crisis decision makers are affected by a number of cognitive distortions or maladaptive coping methodologies. These include viewing the outcome of the crisis and crisis response efforts as being 'overdetermined', fear, being convinced that there are no good alternatives, fearing the loss of self-esteem (p. 144), and polarized thinking or viewing everything as black-or-white, life-or-death (p. 145). He also noted that some psychologists claim that decision makers who are placed under the above conditions actually "regress and move into more primitive styles of thinking and of coping. They become defensive, they become arbitrary. They may begin to make decisions based purely on . . . 'gut reaction', rather than on a cerebral thought process" (p. 145). Additionally, as Rosenthal (1989) noted, when crisis "decision makers have difficulties redefining the situation, they tend to become obsessed with one dominant goal-means perspective" at the exclusion of much of the whole picture (p. 248).

Auf der Heide (1989) noted that "although it may not be obvious initially, the need for joint decision-making eventually becomes apparent in most large disasters" (p. 77). This further complicates the problem of decision making because it introduces added variety of needs, resources, values, interests, trust levels, communication patterns, and many more aspects which have the potential to create conflicts (Dynes, 1970; Quarantelli, 1978, 1985). This environment is further complicated when political and technical advisers become decision makers. Rosenthal, Hart, and Charles (1989) noted that "in some crises there may be such a shortage of expertise that a few available experts - from a psychiatrist in a hijacking case to radiation specialists in a nuclear plant accident - may gain a vital monopoly in exerting influence" (p. 18). Such influence, they noted, tends to be destructive.

Warheit and Dynes (1969) argued, however, that decision making during disasters is more pragmatic and concentrates on what must be accomplished regardless of procedural or legal limitations. Dynes (1967) stated that in many ways when responding to a disaster "a community becomes a much more efficient [and rational] problem solving entity . . ." (p. 16).

However, this 'efficiency' is typically observed after the 'impact' phase of disasters. Decision making during the 'impact' phase and the early part of the 'response' phase is often de-centralized and conducted at the lowest levels of responding organizations (Auf der Heide, 1989; Drabek, 1985, 1986; Drabek et al., 1981; Dynes, 1970, 1978; Rosenthal, Charles, and Hart, 1989).

Once response efforts become more structured and involve more resources, the style of decision making changes and becomes what Hart and Pijnenburg (1989) called an 'ad-hoc informal centralization.' They observed that the decision making process

> emanates from the nature of crises, which require the intervention of high level authorities, and from the demands and the atmosphere of the situation, which require quick decisions made under hectic conditions and in an unstructured environment. Crises generally necessitate the abandonment of routine forms and procedures of decision making (p. 213).

Summary of Chapter 3

This chapter contained a review of the literature describing the unique environment of crises and disasters, in which crisis managers must perform their duties. The review commenced with the definitions of crises, disasters and emergencies. These definitions were followed by a presentation relating the impact of these events on individuals and organizations.

The importance of this chapter is that its content illustrates the significant differences between crises and daily events. It follows, therefore, that the management of crises should be performed in a manner taking this unique environment into consideration.

CHAPTER 4

Literature Review: Crisis Management

By their definition, crises are extraordinary events. Therefore, they require of individuals and organizations unique and concerted effort to prepare for and respond to them. Given the significance of these events the only effective way to overcome their devastation is through the concerted efforts of organizations (Quarantelli, 1985). Fink (1986) noted that "the ability to manage fluid situations and make good, vigilant decisions - just another way to view crisis management - is vital to achieving success at critical turning points in life, in business, in both" (p. 2). Effective disaster response, therefore, requires effective crisis management! But what is the process of 'crisis management?'

This chapter provides an examination of 'crisis management.' An overview of key crisis management frameworks is presented followed by an analysis of the crisis team. A detailed examination of the key components of 'crisis management' and a review of the 'Incident Command System' follows. The conceptual framework of the study concludes this chapter.

An Overview of Crisis Management

One of the terms frequently used to describe the overall process of managing a disaster situation is 'emergency management.' Drabek and Hoetmer (1991) wrote that "emergency management is the discipline and profession applying science, technology, planning, and management to deal with extreme events that can injure or kill large numbers of people, do extensive damage to property, and disrupt community life" (Introduction). Accordingly, they wrote that "the goal of emergency management is to coordinate a unified response to a crisis: to prevent or minimize threat when possible; to respond quickly and effectively when prevention is not possible; and to help restore normalcy as quickly as possible" (p. 263).

Cigler (1988) noted that the management of emergencies or disasters "is the process of developing and implementing policies and programs to avoid and cope with the risks to people and property from natural and man-made hazards" (p. 5). A model developed by the Federal Emergency Management Agency (FEMA) and reported by Rosenthal, Hart, and Charles (1989), illustrated the crisis management process as divided into four key stages: mitigation, preparedness, response, and recovery (p. 14). Fink (1986) wrote that "a crisis can consist of as many as four different phases. . . The phases are: Prodromal crisis stage, Acute crisis stage, Chronic crisis stage, [and] Crisis resolution stage" (p. 20). Only the Prodromal phase can be averted.

Rosenthal, et al. (1989) cautioned, however, that these stages or 'phases' should not be taken as gospel. They wrote that "emphasizing phases of emergency events . . . superimposes a certain orderliness and sequentiality on crises and crisis management processes, which in reality do not always exist" (p. 437).

It is important to note that 'mitigation' is one of the phases of crisis management. This highlights the fact that all crises, and the consequent requirement to manage or respond to them, are not necessarily inevitable. Nudell and Antokol (1988) stated that "many emergencies can be prevented completely with adequate thought and action. Others can be anticipated - often by doing nothing more than using common sense" (p. 8). Rosenthal, Hart, and Charles (1989) supported that premise and noted that "one of the most central elements of crisis management is that crucial efforts should be made before the impact of any given crisis" to avert that crisis or reduce its consequences (p. 14). They suggested a two-pronged approach: establish policies aimed at preventing the crisis, and prepare effectively to deal with the crisis should it occur.

Rosenthal, Hart, and Charles (1989) stated that crises have three main features: a severe threat, an urgent need to make decisions, and a great deal of uncertainty. Herman

(1982) noted that "many disasters could be handled rather routinely by local governments - if those governments had plenty of time for advance planning and sufficient notice to prepare and schedule the appropriate response" (p. 13). As noted in chapter 3, time for planning is simply unavailable during crises. Therefore, emergency management begins with the smallest effort to identify and remove risk.

Fink (1986) noted that "any measure that plans in advance for a crisis (or turning point) - any measure that removes the risk and uncertainty from a given situation and thereby allows you to be more in control of your own destiny - is indeed a form of crisis management" (pp. 18-19). Cigler (1988) declared that "planning for and coping with the unpredictable is government's responsibility, despite varying levels of acceptance for any specific . . . program" (p. 9). Furthermore, she argued that due to its diverse activities, crisis management requires an interdisciplinary effort.

Nudell and Antokol (1988) were critical of current crisis management practices which they claimed were "often little more than 'rolling with the punches' and hoping for the best" (p. 18). They also noted that "unfortunately, most of what passes for crisis management is *reactive* and *ad hoc*. Often, there is little advance planning, or what planning there is consists of untested assumptions filed away some place until an emergency occurs" (p. 14). The importance of planning within emergency management has been well documented (Auf der Heide, 1989; Charles, & Kim, 1988; Cigler, 1988; Comfort, 1988; Drabek, & Hoetmer, 1991; Dynes, 1970; Quarantelli, 1978, 1985; Rosenthal, Charles, & Hart, 1991; Sylves, & Waugh, 1990).

Crisis management should be practised much differently than is currently done. The PCO (n.d.) noted that "so much of what is required to successfully manage a crisis is plain common sense" (p. 3). However, Nudell and Antokol (1988) noted that crisis management also requires specific steps. They wrote that "while in many ways it is reactively oriented, effective crisis management is a collection of anticipatory measures that enable an organization to coordinate and control its responses to an emergency" (p. 20). They also identified a list of duties which crisis teams should perform during a disaster (p. 43) and after it was responded to (p. 49). However, as Drabek and Hoetmer (1991) noted, "the emergency manager need not be able to perform all the tasks required in a given situation, but he or she must be able to identify needs that may arise and ways of meeting them" (p. 263).

One of the requirements for crisis managers and their team members is to be able to survive the stresses inherent in all disasters (Fink, 1986; Raphael, 1986). As stressful as they are, disasters are also "an opportunity for action" (Fink, 1986, p. 133). His advice to crisis managers was:

"We should strive to make stress work for us" (p. 133) by learning how to work with it.

Cigler (1988) noted that successful crisis managers must have many resources immediately at their disposal. These resources begin with accurate information, technical resources, and the management skills to employ them. She cautioned about not "understanding the intergovernmental paradox" (p. 13). According to this paradox "the governments least likely to perceive emergency management as a key priority - local governments - are at the centerstage in terms of responsibility for emergency management" (p. 10).

Suggestions For Practice

Auf der Heide (1989) wrote that there is "the mistaken belief that the disaster problems can be managed merely by an extension of routine emergency measures," and he added that "disasters often pose unique problems for which routine emergency procedures are not well adapted" (p. 22). Furthermore, as Drabek and Hoetmer (1991) noted, disasters often demand quick response.

Environment Canada (1991) emphasized the importance of communications. It noted that "crisis situations must not only be dealt with effectively, they must be *seen* to be dealt with effectively. Effective crisis management depends, therefore, to a large extent on effective communications" (p. 29).

Nudell and Antokol (1988) recommended a model of crisis management activities. Designed as a pyramid, the model identifies a number of key activities in sequential order. Starting at the base of the pyramid, these activities include: "Think about the unpopular; Recognize dangers and opportunities; Define and control response(s); Harness environment; Contain damage; Successful resolution; Return to normalcy; [and] avoid repetition" (p. 21).

According to Nudell and Antokol (1988) there are a number of generic requirements for crisis management. They listed these requirements from a primarily corporate perspective. Although it was not all inclusive, the list contained the following:

> Deciding policy, assessing threat, identifying resources, selecting crisis team personnel, locating the crisis management centre, equipping the crisis centre, training crisis team personnel, testing contingency plans and emergency procedures, dealing with the media, dealing with victims and their families, dealing with other affected personnel (such as employees), getting the organization's normal work done during the crisis, [and] returning to normal after the crisis. . . . (p. 4).

Kartez and Lindell (1990) wrote that the experience of managing a crisis, coupled with the incorporation of lessons learned from this experience and preparation for future crises, were all likely to improve overall emergency preparedness and response. Winslow (1990) recounted his own experience as the Emergency Services Coordinator following a November 22, 1986, major southern California disaster. It involved an underground gas pipeline which ruptured and spilled 500,000 gallons of unleaded supreme gasoline into an adjacent flood control channel. Winslow wrote that his duties involved "five general areas of responsibility: (1) legal protection of the city, (2) coordination with various levels of government, (3) information conduit to the city manager and to elected officials, (4) information source for other concerned parties, and (5) developer of visual documentations" (p. 162). Clearly, the key role of 'communicator' is consistent with many other accounts (Auf der Heide, 1989; Beare, 1980; Drabek, et al., 1981; Withers, 1988).

Stannard (1972) emphasized the importance of coordination. He noted that disaster response organizations which are typically restricted by limited resources should concentrate on "information gathering, interagency coordination, and systems control" (p. 6). In other words, they should work towards cooperation and coordination.

Fink (1986) stated that "crisis management is a process with mechanics to it" (p. 150). As noted above, such a 'process' requires that a number of key functions be performed. These are: planning, communication, coordination, and decision making (Auf der Heide, 1989; Charles, & Kim, 1988; Cigler, 1988; Comfort, 1988; Drabek, & Hoetmer, 1991; Fink, 1986; Quarantelli, 1985; Rosenthal, Charles, & Hart, 1989; Sylves, & Waugh, 1990).

Emergency Planning

Environment Canada (1991) wrote that "like any other management challenge, crises should be planned for, at least in the sense that certain management procedures can be agreed upon in advance and implemented once a crisis hits" (p. 1). These management procedures lead to emergency plans which are "just decisions made in advance" (LaValla, Stoffel, & Erwin, 1991, p. 39). Fink (1986) supported the notion of emergency preparedness and stated: "This, after all, is the height of effective crisis management - crisis avoidance techniques. And when carried out successfully, the players involved may never even know they have side-stepped a potential crisis" (p. 14). Fink (1986) also noted that "what you may not realize is that you probably avert prodromal situations every day of your business life, but you may not be aware of it because you do it so adroitly that it has become a part of your regular routine" (p. 16).

Be that as it may, PCO (n.d.) noted that "crises are inevitable" (p. 5). The concept of 'inevitability' is supported by Perrow (1984), Quarantelli (1978, 1985), and Rosenthal, Charles, and Hart (1989).

Drabek and Hoetmer (1991) noted that "the emergency manager's job with respect to mitigation is to analyze the hazards faced by the community, identify their associated risks, and reduce vulnerability to the hazards, thus mitigating their potential disaster impact" (p. 132). They identified a number of key principles of emergency preparedness and also noted that emergency preparedness and improvisation are fundamental to the process of emergency management. They wrote that preparedness is a continuous process, an educational activity, based on knowledge, and a reasonable management goal. Emergency preparedness reduces many of the unknowns during disasters, and evokes appropriate action. However, the process also tends to be resisted (pp. 33-36).

Fink (1986) suggested that crisis managers may wish to use the planning process to reduce the hardships on them during the response phase of crises. He noted that

> in fact, what you are striving for in the crisis management plan is to make as many mundane, routine decisions as possible when everyone has a cool head. You want to remove as much guesswork as possible from the crisis. You simply want to know where the flashlights are before you need them (p. 58).

Stannard (1972) observed that organizations and communities in crisis situations are incapable of maintaining the functioning of their system within acceptable standards and bounds. They must, therefore, "be aided by the provision of reserve resources supplied with adequate speed and effectiveness. Thus emergency planning is concerned with speedy and effective correction of systems capability shortfalls" (p. 6). Mileti, Drabek, and Haas (1975) noted that "timing is often a pivotal factor in disasters and is important to everyone; yet it is rarely an integral part of disaster planning" (p. 17). They recommended that the matter of time, even the effect of the seasons, be considered in emergency planning practices.

Reilly (1987) (in Barton, 1993, p. 52) noted

> six core components in crisis readiness: 1. The organization's ability to respond quickly to a crisis. 2. Information available to managers about the organization's crisis management repertoire. 3. Managers' access to the organization's crisis management plans, resources, and tools. 4. The adequacy of the firm's strategic crisis planning. 5. The organization's media management ability in a crisis. 6. The perceived likelihood of crisis striking the organization (p. 79).

The importance of pre-planning for disasters was highlighted by Jim Hoffman, the Regional Director of Emergency Preparedness Canada (Alberta/NWT). He wrote: "Preparedness for emergencies should be an unending process of planning between agencies and governments in a mutually reinforcing way. This includes continuous communication supported by the stamp of authority of the governments involved" (APSS, 1991b, p. 36).

Emergency Preparedness Canada (EPC) (1991) noted that federal plans are based on a number of key principles:

> 1. Maximize use of existing systems and procedures; 2. Arrangements should be flexible; 3. Provision of legal authority for decentralized management in a national emergency; [and] 4. Planning and conduct of all national emergency arrangements should be fully co-ordinated (p. 3).

Kartez and Lindell (1990) stated that the failure of governments to plan effectively for community wide disaster response is attributed to various factors which include: "1) a lack of relevant experience with disaster response; 2) a failure to learn from experience; 3) a lack of commitment to carrying out a disaster planning program, and; 4) doing the wrong kind of planning" (p. 5). Kartez and Lindell suggested that the creation of a 'shared schema' among disaster responders, preferably through experience, would greatly enhance disaster preparedness and response. They also observed that "cities gain more in terms of improved preparedness from an increase in planning effort (even without further experience) than from actually experiencing an emergency but neglecting planning" (p. 23). They concluded, therefore, that "the activities making up the emergency planning process exert a strong influence on the quality of preparedness actions" (p. 25).

Scanlon (1990) identified five elements which are commonly considered essential components of emergency response. These are: an emergency plan, a call-out system, an emergency operations centre, a communication system, and effective leadership in an emergency (p. 168). He studied a number of communities across Canada and observed that: "When all the communities were examined with respect to use of the five elements of emergency response, the results were striking. All six 'active' communities employed each of the five elements needed for effective emergency response" (p. 172). He also wrote that provincial governments should support municipal government efforts to prepare for disasters. He added that

> the ECRU reached this same conclusion following its 1976 Port Alice study. The organization asserted that local authorities, no matter what their role, are too involved in day-to-day responsibilities to worry about planning for emergencies that may never happen, so 'the pressure for emergency planning must come from . . . the province (p. 179).

Petak (1985) argued that "emergency management must become a central activity of public administration" at all levels (p. 3). He also noted that

> only when public administration fully accepts and prepares to meet the challenge of achieving efficient and effective emergency management will we see a significant reduction in human suffering and economic loss due to unnecessary exposure of people and property to the risks associated with a complex, technological, urbane society (p. 6).

Waugh (1990) observed that "the social demands, rather than the physical demands caused by the disaster itself, are most often neglected in the planning process" (p. 229). Yet, it is the social demands which are the key to disaster response (Dynes, 1970; Quarantelli, 1978, 1982, 1985). Waugh (1990) concluded, therefore, that emergency plans must concentrate more on the social demands of disaster.

Notwithstanding the above comments about the need for emergency planning, Drabek and Hoetmer (1991) cautioned crisis managers not to forsake flexibility and adaptability of these plans when faced with the reality of crises. They stated that emergency "preparedness and actual disaster response have their limits. Much of what goes on will inevitably have to be improvised. Gaps and inefficiencies will exist, yet things will still get done" (pp. 45-46).

Fink (1986) wrote:

> Being well prepared to manage a crisis is still no guarantee that, during the acute phase of the crisis, you won't have the uneasy feeling that you are not in control of the situation. Acute crises have a way of taking on a life of their own, and it may be impossible for anyone to be in complete control (p. 86).

Kartez and Lindell (1990) argued in favour of emergency planning. They observed that the payoff of such planning "is greater when planning is not merely a technical exercise but is more a face-to-face learning process" (p. 29). They also recommended a broad range of participants in the planning process .

Communication

The importance of clear, effective, and timely communication in crises has been well documented above in chapter 3. Barton (1993) summarized the importance of disaster communication as follows:

> effective communication is essential to the success of every organization. Without staff meetings, telephones, fax machines, public relations functions, memoranda, and face-to-face communication, it would simply be impossible for executives to manage people and projects. That being the case, it is no surprise that identifying and carrying out a series of communication strategies in the midst of crisis is difficult. Sometimes there is no time for overall "strategy"--managers simply make choices as best they can in a limited amount of time. . . . In other crises, however, the choices are more strategically planned, often developed in consort with attorneys and consultants. Knowing in advance which communication options are available helps managers in deciding how to effectively reach many different publics in the event of a crisis (p. 122).

The requirement to communicate effectively applies to intra-organizational as well as inter-organizational communication, and has impact on coordination efforts, decision making, and the overall response effort to a crisis. Fink (1986) wrote that "no matter how good your crisis management team is, no matter how complete your crisis management plan, if you cannot communicate your message during a crisis, you have failed. And failed needlessly" (p. 96).

Nudell and Antokol (1988) wrote that "crisis management is a public affair. Even in situations in which there is a great need for secrecy (for example, in terrorist situations), there will be a large public component" (p. 46). They also pointed out that "one of the surest ways to destroy an effective crisis team and undermine the effectiveness of your organization's crisis response is to withhold information from the team" (p. 45).

Given the importance of communications and the public scrutiny of the response efforts, Fink (1986) suggested that the individual handling the crisis communications must be adept with a variety of communication techniques.

Comfort (1989) reported on the international response effort during the San Salvador earthquake. She noted that the necessary "discovery of meaningful alternatives for responsible action is heightened in an information-rich environment" (p. 337). She then went on to say that "increasing the capacity for information search, transfer, and synthesis within and between organizations . . . is likely to enhance the development of trust in the international disaster assistance process" (p. 337).

As mentioned in chapter 3, the matter of 'trust' is critical to successful coordination and, in turn, response efforts. Auf der Heide (1989) emphasized both the need for effective communications and the importance of 'trust' in the communication process. He recommended that trust be promoted through: "Informal contacts, joint planning and training, preplanned agreements for the division of disaster responsibilities, and the use of similar terminology, procedures, and performance criteria" (p. 79).

While communication efforts are critical among responders and responding organizations, these efforts are no less important between responders and the public. Kartez and Lindell (1990) wrote about the convergence of the public onto a disaster site. They noted that

> convergence is typically motivated by anxiety over missing kin and friends, sympathy for the stricken population and the desire to help it, and interest in an unusual or unfamiliar event. For these needs to be satisfied, the disaster management must provide adequate information, positive direction, and guidance, rather than indiscriminate restraint (p. 6).

Coordination

The ultimate message to crisis managers is to coordinate their resources, knowledge, and efforts. It is also generally agreed that disaster management is not simply the employment of more personnel and material (Auf der Heide, 1989; Comfort, 1988; Drabek, et al., 1981; Mileti, Drabek, & Haas, 1975; Quarantelli, 1985).

Barton (1993) observed that an organization's coordinated effort requires cooperation. He wrote:

> many successful, major corporations have survived both small and significant corporate crises because their senior management team was unified. In some cases, the personalities of the individual team members contributed to a unified front that enhanced rapid, effective decision making. In other cases, managers set aside their philosophical differences in favor of achieving a success in time of adversity (p. 37).

Dynes (1970) reported that the management of disasters generates a new requirement--the coordination of various individuals and organizations who may have had no contact with or knowledge of each other prior to the disaster. He remarked that those who did have prior contact are "required to work even more closely together and to try to minimize overlap and conflict - the seriousness of their tasks calls for efficiency and expediency" (p. 43).

Herman (1982) noted the need to pre-plan the coordination efforts. He stated that disaster officials can recount many stories

> of well-meaning volunteer groups who just dived in without coordinating with local officials. Too often they are ineffective, less effective than they could have been, or even counter productive to the disaster response mission. Pre-planning coordination, with specific roles assigned, will usually overcome such potential problems (pp. 24-25).

Shrivastawa (1989) observed that industrial crises typically have multiple causes. Consequently, "preventing crises and coping with them requires concerted cooperation among [the] primary stakeholders of crises . . . [who] must act in partnership. . . ." (pp. 112-113).

Drabek and Hoetmer (1991) emphasized the importance of timely inter-agency cooperation. They noted that "timely coordination is more important than hierarchical authority. . . . Although often difficult to achieve, coordination is essential and should be maintained under local control to the extent possible" (p. 45).

Authority and Jurisdictions

One of the recurrent problems with crisis teams is their organizational structure and pattern of operation. Many such teams are structured as military or para-military units with the belief that such a structure is the most effective means to respond to crisis. Quarantelli (1985) wrote that "some military personnel involved in natural or technological disaster planning suffer from the illusion that the command and control system that exists for limited wartime military emergencies . . . can be imposed upon a major civilian disaster situation" (p. 18).

The imposition of the military structure begins right from the planning process. Kartez and Lindell (1990) noted that typically

> disaster plans emphasized by state and national government funding requirements . . . are lengthy procedural documents descended from hierarchical military command models. Such plans often attempt to

> assert a centralized system of control rather than facilitate the adaptation of the organization to changing circumstances (p. 8).

The para-military structure, with its centralized command system is not practical in peace-time disasters (Drabek, 1981, 1987; Dynes, 1981; Auf der Heide, 1989). The reason for the ineffectiveness of the centralized 'military' structure is that "in the United States . . . no single organization can legitimately control what all other public and private organizations do and don't do in a peacetime disaster" (Auf der Heide, 1989, p. 77). Similar limitation exists in European countries (Charles & Kim, 1988; Rosenthal, Charles & Hart, 1989), Australia (Beare, 1980; Britton, 1989), and Canada (ECRU, 1985, 1987; Scanlon, 1990).

Drabek and Hoetmer (1991) wrote that the military-like model of command and control is based on the following premises: "Massiveness of disaster impacts, weakness of victims, fragility of affected social systems, breakdown of social control, and the need for a single encompassing structure to replace non-functional organizations" (pp. 44-45). They concluded that "none of these premises is valid" (p. 45). Drabek and Hoetmer (1991) argued against the imposition of the military control model, and in favour of a more open process.

Hart and Pijnenburg (1989) noted that centralization is "an endemic feature of [all] organizations operating during a crisis" (p. 214). They also noted that "it is generally assumed among practitioners in [para military] agencies that centralization, which includes a strict hierarchy and unquestioned discipline, promotes organizational effectiveness. In reality, centralization can prove to be a mixed blessing" (p. 214).

Comfort (1989) also argued against the subjugation of all authority to one command agency. She noted that "in unclear, ambiguous, uncertain conditions, shared authority reduces the risk of error and increases the generation of information upon which decisions are made" (p. 334).

Quarantelli (1985) noted that organizations involved in community disasters are likely to encounter at least four problem areas involving their authority:

> (1) loss of higher echelon personnel because of overwork; (2) conflict over authority regarding new disaster tasks; (3) clashes over organizational domains between established and emergent groups; and (4) surfacing of organizational jurisdictional differences (p. 15)

Quarantelli (1978, 1985, 1987) also noted that these conflicts need to be resolved through planning efforts prior to the disaster. These problems can be resolved during the disaster but with difficulty (Auf der Heide, 1989).

Emergency Preparedness Canada (EPC) (1991) does not necessarily advocate the military-like model of control. However, it does encourage the 'lead agency' or 'lead department' concept which was initiated in Canada in 1980. "The concept is based on employing departments and agencies in tasks in which they have traditional or latent capability. In effect, the department leads in its own area of expertise" (APSS, 1991, p. 37). EPC (1991) also noted that the "overall co-ordination of the preparedness for emergency situations should rest with a single organization," preferably the local municipality's elected officials (p. 4).

EPC (1991) advocated flexibility in the exercise of authority. It noted that any crisis management system should be able to adapt to the changing requirements of the disaster by being centralized or decentralized as appropriate. Furthermore, where response time may be limited the "response arrangements must be in place and exercised beforehand" to allow for timely and appropriate response (p. 9). On the other hand, Drabek and Hoetmer (1991) argued that "effective emergency management should not be based on a command and control model but on what might be called an emergency resource coordination model" (p. 45).

Perrow (1984) observed that disasters can be categorized by a four-part grid based on the interactions of the disaster's components (linear versus complex), and their coupling (tight versus loose). Perrow proposed that each of the four groups of disasters call for a different authority level. Complex and loosely coupled systems such as universities are best decentralized. Linear and tightly coupled systems, such as pharmaceutical plants, should be centralized. Linear and loosely coupled systems such as manufacturing plants could be either centralized or decentralized. However, complex and tightly coupled systems such as nuclear plants should be neither. The "requirements for handling failures in these systems [of the last group] are contradictory" (p. 331).

Decision Making

Much has been written on the processes of decision making. Mintzberg (1976), for example, stated that "there are 7 'routines' that seem to describe the steps involved in . . . decision making. These are recognition, diagnosis, search, design, screening, evaluation/choice, and authorization" (p. 55). He noted that almost nothing is known about two of the most important routines: the diagnosis and design of the solution. The need for knowledge on these two routines is even more critical given the crisis environment with its chaotic and ill-defined state and critical time pressures (Assefa, & Wahrhafiq, 1989).

Anthony (1981) identified five types of decisions made by managers. These are decisions relating to planning, organizing, staffing, directing, and controlling (p. 9). Fink (1986) viewed decision making from another perspective and concluded that "under stress, there are five ways to make decisions. Four of them, psychologists would tell you, are 'maladaptive.' Lets just say 'wrong'." (p. 136). Fink titled the five ways: vigilance, unconflicted inertia, unconflicted change, defensive avoidance, hypervigilance (pp. 137-141). The only effective approach, which he recommended to crisis managers, is the vigilant approach to decision making where the decision maker weighs carefully all the factors relevant to the problem, and makes a balanced decision (pp. 137-138).

Fink (1986) noted a major weakness in the ability of human beings to make effective decisions in a crisis. He noted that "otherwise good decision makers, understanding some of the pressures and conditions that characterize the crisis, such as time urgency or having vital interests at stake, suffer intensely high levels of stress that begin to compromise the quality of their decision making" (p. 139). Comfort (1989) made similar observation about that weakness and wrote:

> The trauma of an urban disaster presents an extraordinary test of human intelligence, courage, and capacity to act under adverse circumstances. The paradox of decision making in disaster operations is that most people involved indeed attempt to operate at maximum human capacity, extending their mental, physical, technical, and emotional abilities beyond previous standards. Yet, their performance is often inadequate to meet the massively complex demands posed by a major urban disaster (p. 323).

Comfort (1989) also noted that the paradox for each decision maker involved in a disaster is keeping the information search and synthesis process in balance with the mobilization and implementation efforts that produce action" (p. 323). It, she noted, is far from an easy task!

Comfort (1989) wrote that "Newell and Simon, writing on human problem solving, identify the limitation of human short-term memory as the ability to remember seven items at a time, plus or minus two. In disaster environments, it is critical for human decision makers to extend their memories and thus, their problem solving abilities, by means of external support" (p. 332). She also observed that "the ability of decision makers to respond appropriately to this information from the dynamic environment of disaster is frequently limited by the very rules they have created to ensure reasonable, efficient operating procedures under conditions of complexity" (p. 333).

Rosenthal, et al., (1989) noted that a major part of the stress imposed on crisis managers and their decision making process "may be due to self imposition or self-indulgence" (p. 445). These decision makers may embark on actions (or inaction) which reduce their operational time lines, or they may establish self imposed and unrealistic time lines for their operation. Assefa and Wahrhaftig (1989) observed that "decision makers ought to avoid setting arbitrary deadlines for themselves. They need to do everything they can to adopt a problem solving attitude. . . ." (pp. 274-275). They also advised decision makers in a crisis "to resort to interactive and ad-hoc approaches and make choices based on learning from feedback gained during the implementation process. To do so requires decision makers to closely monitor the outcomes of the chosen alternative and to be prepared to change course if events are not going in the desired direction" (p. 275).

Fink (1986) observed that "postdecisional regret during a crisis can prove disastrous" (p. 138). He also wrote:

> Under crisis-induced stress, decision makers may rely heavily on certain cognitive crutches that bring about less than efficient and less than totally effective decision making. Although the decisions made are minimally satisfying, they tend to depend on optimizing criteria . . . and therefore do not constitute high quality decisions (p. 146).

He noted that "this is really the difference between a decision maker who can simply survive a crisis and one who is capable of turning the crisis into an opportunity" (p. 146). His advice to crisis managers who wish to improve the quality of their decisions in a crisis is "to stage and participate in crisis-simulation workshops in order to 'inoculate' [themselves] against stress" (p. 148). He also recommended the development of emergency plans, avoidance of decision making in a vacuum, and brainstorming for possible solutions as means for improving crisis managers' decisions.

Assefa and Wahrhaftig (1989) observed the need for crisis decision makers to monitor their stress levels and ensure that the stress is not causing them to commit grave errors. They noted that stress may cause decision makers to "unduly simplify the problem, exclude valuable data, reject views and evidence that do not agree with their biases, or jump to unjustified conclusions" (p. 275). Instead, they called for decision making with

> a flexible attitude, close observation, and constant data-gathering and analysis. In a sense, this is decision making with the benefit of hindsight; however, the attempt is to shorten the time lag between observations and action. This is a variation of what Drake and his associates call 'reflection in action' (p. 276).

Fink (1986) cautioned against four major types of decision makers whose respective cognitive crutches may adversely affect disaster operations. These types include the decision maker who:

> 1) Confines the alternative choice to only small incremental changes - sort of variations on a theme - when what are required are alternatives that represent major changes from the present course of action.
> 2) Is overly concerned about popularity and doing what he or she perceives as the popular thing to do. . . .
> 3) Gives undue weight to historical analogies, relying on history alone. . . .
> 4) Relies on only a general formula or plan . . . that fails to address the specific content of the issue at hand (pp. 146-147).

Comfort (1989) observed that "in the dynamic context of disaster, the basis of authority shifts from rules to information as decision makers strive for the most effective means of coping with a radically altered situation" (p. 334). She suggested to crisis decision makers to work within "a problem solving orientation which mixes rules with heuristics, or 'rules of thumb,' to devise a strategy that 'works' in the given situation" (p. 334). She also advised decision makers to "move from shared to hierarchical to shared exercise of authority as the circumstances require, often several times a day . . . [depending] upon the extent and quality of information available to them" (p. 335). Failure to do so, she wrote, impedes disaster operations.

Fink (1986) wrote that when making decisions in a crisis "there is absolutely no stigma attached to asking for help. Remember: if you make a decision and you do not implement that decision, you have not made a decision at all" (p. 144). Ritti and Funkhouser (1977) observed that "great decisions are made, not born . . . [and that] emphasis on making the correct decision is misplaced. In fact, it seems a bit naive to believe in the existence of such a thing as *the* decision, existing at a given point in time" (p. 238). The important aspect is to make a decision, take action, observe the consequences, and respond appropriately to the changing situation (Assifa, & Wahrhafig, 1989; Comfort, 1989; Fink, 1986; Rosenthal, et al., 1989).

The final word should perhaps go to Barnard (1938). In the introduction to *The Functions of the Executive* he wrote: "At a crisis in my youth [my father] taught me the wisdom of choice: to try and fail is at least to learn; to fail to try is to suffer the inestimable loss of what might have been." In a community disaster, the failure to act has broad and devastating consequences (Charles, & Kim, 1988; Dynes, 1970; Rosenthal, Charles, & Hart, 1989; Sylves, & Waugh, 1990).

Key Obstacles

There are many reasons for the failure of emergency management efforts. Lowenhardt and Berg (1989) noted three such areas: command, coordination, and communication. Quarantelli (1985) emphasized that "coordination is sometimes discussed as if it were an absolute good. This is not true. There can be effective organizational responses in disasters without a high degree of coordination" (p. 19). However, he too conceded that in many cases coordination was important for successful disaster response.

Cigler (1988) identified ten key impediments to effective crisis management. At the top of that list were the observations that disasters are low probability events, that political coalitions to prepare for disasters are rare, and that the true nature of crisis management is not clearly understood (pp. 13-15). She observed that these impediments need to be overcome for crisis management to succeed.

Cigler (1988) also advised crisis managers to understand what she termed the 'intergovernmental emergency management paradox.' She described this paradox as follows:

> (1) Intergovernmental relations and inter- and intraorganizational decision making play pivotal roles in successful emergency management.
> (2) Regulations passed by one level of government necessitate promulgation and enforcement of compliance by other levels. Nothing is self

> implementing.
> (3) Deficiencies of resources, especially technical expertise [are evident] at lower levels of government. . . . (p. 12).

Drabek, et al. (1981) identified problems with current emergency management practices and made a number of recommendations. These included the development of an emergency response data base, the improvement of crisis managers' capabilities, the improvement of the capability of ordinary citizens to care for themselves during disasters, the improvement of emergency planning practices, and the continuation of the effort to stay abreast of the state of the art. Drabek, et al. (1981) advised crisis managers to remember that disaster responses "are multiorganizational and emergent . . . [and that] management of such differentiated and loosely connected emergent networks must be viewed as a unique and legitimate problem for which existing theories of private firms and public bureaucracies have limited applicability" (p. xx).

Waugh (1990) wrote about the limitations on effective emergency management. Key among these obstacles were: The diversity of hazards facing organizations and communities, the low importance of emergency preparedness, general resistance to regulatory and planning efforts, the lack of strong political and administrative constituency, the difficulty of measuring progress in emergency preparedness efforts, the technical complexity of the field, the fragmentation of response systems both vertically and horizontally, and the lack of resources (pp. 226-234).

Barton (1993) noted that "when managers remain focused on their primary objective--solving a crisis in a timely fashion and working skillfully [sic] to help others (including opponents) avoid public embarrassment, the chance of resolving the crisis can be significantly enhanced" (p. 22). As an example, he referred to the Cuban missile crisis and President Kennedy's efforts not to box the Soviets into the undesired military response.

The Crisis Team

One cannot address the issue of crisis management without also discussing the 'team' which would manage the crisis. Moreover, regardless of the nature of an organization, one expects to have at least one person in its management group whose function it is to manage the organization in a crisis (Drucker, 1974; PCO, n.d.). Nudell and Antokol (1988) wrote that "leadership of [a] crisis action team must be vested in one person, who should designate an alternate capable of acting independently in his or her absence" (p. 33).

Auf der Heide (1989) reported that "the history of disasters is rife with unsung heroes, sacrifice, and remarkable improvisation under conditions of extreme duress and uncertainty" (p. 11). These 'heroes' are often the crisis managers and their team members.

Barton (1993) discussed crisis management in business environments. He noted that

> crisis management should involve *all* departments of an organization. It should draw on all available resources. When managers must respond to myriad audiences and problems under stressful conditions, they need to know the theories and practical dimensions of organizational behavior, organizational communication, ethics, strategy, and public relations. To utilize such knowledge in a coordinated approach, you need to build a team (p. 33).

Drucker (1974) highlighted the need for senior managers of business organizations to also be effective crisis managers. He wrote:

> There is also a need for 'stand-by' organ for major crises, for somebody who is available to take over when things go seriously wrong. Then it is the most experienced, the wisest, the most prominent people in an organization who have to roll up their sleeves and go to work. They are legally responsible (p. 612).

Nudell and Antokol (1988) explained that "the best crisis managers are those who are also involved in the contingency planning process that should precede any emergency. . . ." (p. 20). They also pointed out that effective crisis management must be inclusive of senior management and that such involvement at the planning stage "will pay large dividends when the crisis arrives" (p. 22).

Fink (1986) wrote on this matter from a corporate perspective. He noted that "every crisis demands a crisis management team to run the plays which may be called by the CEO or by some technical authority" (p. 57). Such an effort may help an organization in the long run. Nudell and

Antokol (1989) remarked that "effective crisis management permits an organization to maximize its opportunities and minimize the danger it confronts" (p. 20). However, they also cautioned that "one of the surest means to neutralize a crisis team, and to jeopardize the organization's crisis response is to withhold vital information from it" (p. 45). To that end, Fink (1986) recommended that an organization's chief communicator always be included as a member of the crisis team (p. 96).

Drabek, et al. (1981) reviewed the management of search and rescue operations in various types of disasters. They reported that "the response system is comprised of multiple units with varying bases of authority and sponsorship" (p. xviii). This further complicates the 'crisis team' concept because in a disaster an organization's crisis team may suddenly become an integral component of a larger multi-agency crisis team.

Petak (1985) cautioned against the over-involvement of technical experts, and the under-involvement of elected officials in disaster decision making. He noted that technical experts and professional administrators, because of their knowledge and position, may be provided more involvement in deciding the purpose, execution, and consequences of disaster response. He stated that "elected officials must, therefore, assert their responsibility as representatives of the public and actively engage in the process of" emergency management--mitigation, preparation, response, and recovery (p. 5).

The risk of uninvolvement by senior municipal officials in disaster management is illustrated by Sutphen and Bolt (1990). They noted that "a recent study of a flood disaster in Wilkes-Barre, Pennsylvania, reported that the disaster mobilized the citizenry and forced a replacement of the city manager system. . . ." (p. 151).

Dixon (1976) noted that one of the major obstacles to effective management are incompetent managers. He wrote: "One of the chief differences between ourselves and the ancients lies not [unfortunately] in human nature, but rather in the proliferation of our skills, and our institutions, and therefore in the number of niches in which the incompetent can now instal themselves as persons of consequence" (p. 395). Waugh (1990) and Drabek and Hoetmer (1991) argued, therefore, for the creation of an emergency management profession. Drabek and Hoetmer (1991) noted that the role of members of this profession "is neither easily performed nor well understood. Nor is it a readily accepted role in many local jurisdictions" (p. 49). They highlighted the need to develop clear roles and training programs for this group of professionals. They also cautioned, that "at this point . . . a professional role is unfolding amid uncertain expectations rather than in relation to well-defined standards of performance" and knowledge (p. 49).

Petak (1985) wrote about the skills that the public administrator must have to serve as an effective emergency manager. He wrote that the manager

> must have the conceptual skill to understand (1) the total system, (2) the uses to which the products of the efforts of various professionals will be put, (3) the potential link between the activities of various professional specialists, and (4) the specifications for output formats and language which are compatible with the needs and understanding of others within the total system (p. 6).

Applications of Crisis Management

Despite the obstacles to the effective management of a crisis, organizations and governments have over the years developed, implemented and modified various approaches to conduct emergency management operations--mitigation, preparedness, response, and recovery. Generally speaking, these processes strive to meet a similar goal, namely "the rapid restoration of normal routines" (Drabek, & Hoetmer, 1991, p. 33).

National emergency arrangements in Canada typically flow from two key principles. They are "first, the response is initiated by those affected, then augmented by successive orders of government as additional resources are required. Second, the operations are managed by the lowest order of government that can ensure an effective co-ordinated response" (EPC, 1992, p. 2). Most often, the 'lowest order of government' is that of the local municipality.

Emergency Preparedness Canada (EPC) is the lead federal agency mandated to prepare for emergencies (PCO, n.d.). Like FEMA, its counterpart in the United States, EPC is tasked to prepare for potential crises. Both agencies execute their mandate through some degree of policy development, planning, education, equipment stock piling, and coordination of federal resources during disasters.

Federal departments in Canada are mandated through legislation to draft emergency plans which will ensure their ability to maintain essential services and to provide support to other agencies during disaster. This network of support, internal to the federal government, is also available upon request to provincial governments and, through them, to municipal governments.

Most of Canada's provincial governments have some sort of legislation which provides a framework for provincial emergency response. Each province has an agency, typically referred to as its 'Emergency Measures Organization,' which is responsible for emergency planning. These agencies interrelate through Emergency Preparedness Canada and are involved in the many initiative to enhance the emergency preparedness of Canadians.

Emergency Preparedness Canada, Alberta Public Safety Services (APSS), and British Columbia's Provincial Emergency Program (PEP) each have their own training facility which provides courses and workshops to various emergency planners and disaster responders. Collectively they cover a range of training programs relating to a variety of disasters from persons lost in the woods, to urban rescue, dangerous goods accidents, school and municipal emergency planning, and specific disaster-site management techniques.

The process recommended by the above schools is called the 'Emergency Site Management' system. The title reflects the belief that disaster response demands an inter-organizational and multi-authority coordinated approach. Consequently, although agencies and organizations may be placed under a 'lead agency' the management process is based on 'coordination' versus 'command' (Kuban, 1993a).

A number of other systems or processes also exist and are utilized to manage emergencies. Drabek and Hoetmer (1991) briefly commented on the Integrated Emergency Management System or IEMS. They noted that IEMS is a "management strategy developed by FEMA to implement comprehensive emergency management (CEM)" (p. 55). They also noted that IEMS is composed of three major components: an element of risk assessment, an inventory of community capability and resources to deal with the potential risk, and the steps necessary to bridge the gap between the two (p. 55).

Another system--the Incident Command System--which has been adopted by fire services across North America deserves a separate mention, and is discussed below.

The Incident Command System (ICS)

The Incident Command System was conceived following a set of wildland fires which devastated southern California in 1970. "The combined cost and loss figures [for the two-week fire] totalled $18 million per day or $750 thousand per hour" (Kramer, & Bahme, 1992, p. 68). What was even more devastating was the organizational chaos during the disaster. This prompted the Federal Emergency Management Agency (FEMA) to fund a special project titled "Firescope" which led to the creation of the Incident Command System.

Kramer and Bahme (1992) noted that the ICS was developed to meet the advantage of combining the resources of responding organizations under one umbrella, and to be adaptable to various scenarios from day-to-day operations to major disasters requiring the involvement of many agencies and jurisdictions. They noted that "ICS required mutual agreement and acceptance of four things: the organizational structure, common operational procedures, common terminology, and personnel qualification" (p. 68).

Carlson (1983) defined the ICS as including "operating requirements, 8 interactive components and procedures for organizing and operating an on-scene management structure" (p. 3). In essence, the Incident Command System is an organizational structure which permits fire departments which respond to an incident to coordinate their own resources as well as the resources and activities of those which arrive to assist them. The 'system' is designed to expand and contract based on the need for and availability of resources (Carlson, 1983; IFSTA, 1989; Kramer, & Bahme, 1992).

Kramer and Bahme (1992) wrote that ICS employs five key functions: command, operations, planning, logistics, and administration (p. 69). Each one of these is further expanded as necessary during major disasters, transforming what may be a flat organization initially into a multi-tiered and multi-functional organizational structure. As the need for resources decreases, the organization is again reduced to its initial smaller structure. In the process, Carlson (1983) observed that the ICS provides: "Common terminology, modular organization, integrated communications, unified command structure, consolidated action plans, manageable span-of-control, predesignated incident facilities, [and] comprehensive resource management" (p. 7).

Kramer and Bahme (1992) reported that the Incident Command System was built around three general principles of organization: unity of command, span of control, and delegation of authority. It is generally understood that the 'command' component will be in the hands of fire department personnel (Carlson, 1983).

Another model, similar to the ICS model, was developed by Alan Brunacini, Fire Chief of Phoenix, Arizona. The

Brunacini model, called the "Fire Ground Incident Command System", and ICS were developed at about the same time and contain many similarities. However, Kramer and Bahme (1992) noted that although the Fire Ground ICS has been accepted throughout the United States, it is "more effective for routine day-to-day emergencies, whereas the federal [ICS] model lent itself more readily to large-scale incidents" (p. 70). Regardless, both systems are well known, practised, and each has been enhanced by many modifications (Carlson, 1983; IFSTA, 1989; Kramer, & Bahme, 1992).

According to the Fire Ground ICS system, to be effective, procedures must adhere to the following criteria: defined organizational structure, unity of command, proper span of control, clear division of labor, maintained discipline within the whole organization, the incorporation of fundamental group principles, explicitly stated authority to establish and transfer 'command' (Brunacini, 1985; IFSTA, 1989).

Orientation to the Study

This study was based on observations of actual efforts to manage various disasters throughout Europe, Australia, and North America. These observations portray an environment which is drastically different from traditional day-to-day management practices (Charles, & Kim, 1988;

Drabek, et al., 1981; Drabek, & Hoetmer, 1991; Dynes, 1970; Nigg, 1985; Quarantelli, 1982, 1985; Rosenthal, Charles, & Hart, 1989). As noted by Quarantelli (1985) "a disaster is not simply a bigger everyday emergency" (p. 9). The management of a disaster requires, therefore, a unique set of management skills (Auf der Heide, 1989; Britton, 1989; Brunacini, 1985; Charles, & Kim, 1988; Drabek, 1987; Drabek, & Hoetmer, 1991; EPC, 1990, 1992; Perrow, 1984; Quarantelli, 1985; Rosenthal, Charles, & Hart, 1989; Sylves, & Waugh, 1990).

In addition to organizational and managerial complications, disasters also pose a predictable emotional and mental strain on all those who are involved with the disaster (Raphael, 1986). This impact does not spare the managers and does affect their ability to manage. It affects their ability to make decisions (Barton, 1993; Charles, & Kim, 1988; Fink, 1986; Rosenthal, Charles, & Hart, 1989), communicate (Barton, 1993; Beare, 1980; Dynes, 1970; Nigg, 1985; Perrow, 1984; Waugh, 1990; Withers, 1988), and coordinate (Drabek, et al., 1981; Hoffman, 1988; La Plante, & Kroll-Smith, 1989; Quarantelli, 1985).

A disaster management profession must be developed to permit the growth of knowledge and skill, and its appropriate application in the management of disasters. Unfortunately, this profession does not exist and its development has yet to gain sufficient attention and effort

(Britton, 1989; Cigler, 1988; Drabek, 1987; Kramer, & Bahme, 1992; Petak, 1985; Ridgeway, 1990; Waugh, 1990).

One of the key steps to developing a training program for crisis managers is to understand the elements which are unique to crisis management. Another major step is to identify the best manner to educate these crisis managers. This study is designed to initiate the development of a program to prepare individuals to manage community-wide crises.

Summary of Chapter 4

This chapter contained the literature review relating to the management of crises. It highlighted observations on and recommendations for the practice of crisis management. It also defined the conceptual framework of the study.

Chapter 5

Research Design And Methodology

This chapter outlines the research design, methodology, and data analysis. The first section describes the research design. It defines the focus of the study and its nature. The second and third sections respectively are research methodology and data analysis.

The description of the research methodology is separated into two segments, each relating to one of the key research instruments: the questionnaire and the interview. These segments are followed by a discussion of the issues of reliability and validity of the data and the research methodologies which were applied in the study.

The data analysis section includes both a general discussion as well as a specific review of quantitative and qualitative analysis.

Research Design

Bogdan and Biklen (1982) wrote that research design refers to the "researcher's plan of how to proceed" (p. 55). Their description of the research strategy describes the method employed in this study. They noted that

> A strategy qualitative researchers employ in a study is to proceed as if they know very little about the people

> and places they will visit. They attempt to mentally cleanse their preconceptions. To state exactly how to accomplish their work would be presumptuous. Plans evolve as they learn about the setting, subjects, and other sources of data through direct examination. A full account of procedures is best described in retrospect, a narrative of what actually happened, written after the study is completed (p. 55).

Bogdan and Biklen (1982) also reported that "qualitative researchers have a design . . . [which] is based on theoretical assumptions . . . and on data collection traditions" (p. 55). Guba and Lincoln (1982) noted that while researchers of the rationalist paradigm insist "on a preordinate design . . . naturalists, entering the field largely without a priori theory or hypotheses, literally are unable to specify a design (except in the broadest process sense) in advance" (p. 245). So was the case in this study.

Focus of the Study

The purpose of this study was to set the stage for training programs on the management of a large calamity which required a multi-agency and multi-jurisdictional response. The study focused, therefore, on the unique environmental conditions which typically exist during crisis or disaster periods. The activities which crisis managers executed and the conditions in which these activities were performed were, therefore, of key interest to the research.

The study is based on the perceptions of crisis managers whose responsibilities during disaster response operations provided them a broad and unique view of these operations. The nature of their positions and responsibilities in a disaster afforded these crisis managers a unique and useful view of the 'crisis management' process and an appreciation of its limitations.

The study focused on a broad set of disaster contexts. It included disasters from diverse organizations, organizational levels, geographical settings, and response requirements.

The Nature of the Study

Eisner (1991) wrote that "all *empirical* inquiry is referenced in qualities. Even inquiry in the most quantitative of the sciences results in claims that refer to qualities" (p. 27). He noted that the word *empirical* is a derivative of *experience* and that "neither science nor art can exist outside of experience, and experience requires a subject matter. That subject matter is qualitative" (p. 25).

This study is based on the 'naturalistic' (versus 'rationalistic') method of inquiry which Guba and Lincoln (1982) and Lincoln and Guba (1985) described so aptly. They noted that "the rationalistic and naturalistic paradigms are often treated as though the major differentiating characteristic [between them] is their relative preference for quantitative or qualitative methods" (Guba & Lincoln, 1982, p. 244). They added that the two methods are differentiated by their unique paradigms and the anxioms which define each.

Guba and Lincoln (1982) wrote that the "naturalistic inquiry is a paradigm of inquiry, that is, a pattern or model for how inquiry may be conducted" (p. 233). They argued that the 'naturalistic' method of inquiry is as credible as the 'rationalistic' (or 'scientific') method. They advocated the use of the 'naturalistic' method of inquiry because the rationalistic paradigm "reflects earlier rather than emergent epistemologies of science . . . [and] the particular axioms of rationalism are but poorly fulfilled in social/behavioral inquiry" (p. 235).

Lincoln and Guba (1985) argued that the "naturalistic [paradigm] is the paradigm of choice in virtually every scholarly field" (p. 66). They observed that "we are like the world we see, and, more important, the world we see is like us" (p. 66).

Guba and Lincoln (1982) and Lincoln and Guba (1985) observed that naturalistic inquiry is based on a number of axioms which are listed below. Reality can be viewed in multiple, intangible, divergent, and holistic forms. An interrelated relationship exists between researcher and respondent. Truth statements are often based on context-bound working hypotheses. Explanations of action are based on the nonmanipulable shaping of the plausible. The values of both the researcher and respondents are related to the inquiry process. Guba and Lincoln (1982) wrote: "The naturalist, then, is concerned first with developing an adequate idiographic statement about the situation he or she is studying, accompanied by sufficient 'thick description' to make judgements about transferability possible, should anyone care to ask that question" (p. 241).

Owens (1982) wrote that the naturalistic paradigm is founded on two key concepts which he named the *naturalisitic-ecological hypothesis* and the *qualitative-phenomenological hypothesis*. He noted that the former "claims that human behavior is so significantly influenced by the context in which it occurs that regularities in those contexts are often more powerful in shaping behavior than differences among the individuals present" (p. 5). His second hypothesis states that to understand human behavior one must understand the framework which individuals employ to interpret their environment. That framework "can best be understood through understanding their thoughts, feelings, values, perceptions, and their actions" (p. 5).

Eisner (1991) identified six key features of qualitative studies. He noted that these studies (1) tend to be *field focused*, (2) relate to *the self as an instrument*, (3) have an *interpretive character*, (4) use *expressive language*, (5) pay *attention to particulars*, and (6) become believable because of their *coherence, insight*, and *instrumental utility* (pp. 32-39). "On the whole, however, qualitative researchers observe, interview, record, describe, interpret, and appraise settings as they are" (p. 33). "There is no statistical test of significance to determine if results 'count'; in the end, what counts is a matter of judgement" (p. 39).

Eisner (1991) also noted that "qualitative studies ... are usually expressed in stories. That is, authors try to craft a picture of the situation, person, or community they have studied" (p. 189). This story telling process is best done around key themes and issues which emerge out of the data collected through the study. Eisner (1991) noted that "the identification of themes requires researchers to distil the material they have put together. The notes and transcripts . . . can be used more or less inductively to generate thematic categories" (p. 189).

Glaser and Strauss (1967) coined the term 'grounded theory.' They identified it as theory which "fit a situation being researched, and work when put into use" (p. 3). By 'fit' they meant readily and easily related to the data, and by 'work' they meant being meaningful in explaining the behaviour which is studied.

This study is both descriptive and exploratory in nature. It aims to develop grounded theory on the management of crises. Quantitative data were gathered through Likert-type scales in two parts of the questionnaire. The qualitative data were gathered through the open-ended questions in Part 3 of the questionnaire and through interviews.

Research Methodology

Potential respondents for this research were available from nearly every community and major organization across Canada. However, only a small and hard-to-identify segment of this population was likely to contribute in a significant manner to the study. Furthermore, members of this group were located throughout Canada across a wide spectrum of organizations.

Two fundamental research methodologies were employed on this study--questionnaires and interviews. The questionnaire survey approach was deemed to be the most appropriate research method for collecting *general* data on this topic. More detailed information was then gleaned through direct interviews with select individuals.

The Questionnaire

The questionnaire is a research tool which is employed by both rationalists and naturalists. Borg and Gall (1983) noted that questionnaire studies and interview studies are conducted using essentially the same steps. They provided extensive description about the mechanics of designing and implementing questionnaires, and analyzing their data. Much attention was given to their recommendations in the development of this study's questionnaire.

The questionnaire used in this study was titled "Crisis Management Questionnaire" (Appendix A). The information collected through the questionnaire provided both quantitative and qualitative data. Quantitative data were collected through a series of fixed-response questions. Qualitative data were obtained through four general open-ended questions at the end of the questionnaire.

Part 1 - Context questions. This was the first Part of the questionnaire. It was designed to provide a context for the responses by identifying the key background elements of the respondents. Respondents were asked to identify which disaster(s) they participated in, at what level, and as representatives of which disaster organization (e.g., fire, police, ambulance, the military, industry, or government). Respondents were also asked to identify their primary and, where applicable, secondary role in the disaster.

Most of these questions were fixed-response type which required the checking-off of the appropriate box. The questions about the primary and secondary disaster roles required the respondents to write-in their respective roles as applicable.

Part 2 - Specific questions. This second Part of the questionnaire contained two key questions each with its own sub-components. The intent of this Part was to obtain respondents' perceptions of the effects of disaster on a number of organizational variables. In Question #1 respondents were asked for their observations on their organization and the general operational environment (i.e., the quality and quantity of information). In Question #2 respondents were asked to focus more on the effects of the disaster on their ability to exercise certain managerial skills (e.g., set priorities, take independent action, acquire and control resources).

Both questions involved the use of Likert-type scales. Responses to Question #1 were made along a five-point scale. These were: Strongly agree, agree, disagree, strongly disagree, and unobserved. Question #2 had a six-point scale which included: Significantly expanded, moderately expanded, unchanged, moderately reduced, significantly reduced, and unobserved.

Part 3 - General questions. This was the third and last part of the questionnaire. It contained four open-ended questions intended to provide information on the activities of crisis managers.

Question #1 asked: "What activities would you consider were the 'start' and 'finish' of the crisis management process in the disaster you experienced?" The intent of this question was to identify, where it exists, the triggering event or activity which initiates and terminates the crisis management process. Assuming that there is a difference between day-to-day management and crisis management, this question was designed to identify the switching point between the two processes.

Questions #2 and #3 were designed to identify the degree of difference between management activities in day-to-day operations and in a crisis. Question #2 asked respondents to identify the activities of "crisis management." Question #3 asked: "Are the management activities performed by crisis managers different from those performed by day-to-day managers? If 'yes' what are these differences?"

Question #4 asked for additional observations and comments which would "add to a greater understanding of the crisis management process." At the end of the questionnaire, participants were asked to identify themselves by indicating their names, addresses, and phone numbers.

Questionnaire Development

The questionnaire was developed after an extensive review of the literature on the effects of disasters on organizations. Three key aspects became apparent and evolved as the basis of the questionnaire. One aspect was that there are but few studies of disaster behaviour in **Canadian** disasters. Two, much of the literature addresses various components of 'crisis management' yet few sources confront the process head-on and define it in concrete terms. Three, much of what has been written on 'crisis management' fails to reach the front-line troops or is so 'academic' that it is unreadable by them.

The literature review also identified the lack of questionnaires which could address the needs of this study. A unique questionnaire was, therefore, required and was developed by assessing the key elements of organizational behaviour in a disaster: Decision making, communication, and coordination.

Broad questions were developed at first and were offered to four colleagues for their critique. These individuals were from various emergency response fields and were similar in backgrounds to those of potential responders. Based on their valuable feedback the questionnaire was modified and presented as a "pilot" to six emergency responders from Edmonton's police and fire services. These individuals were also asked to check the questionnaire for ambiguous instructions and questions, and to note any repetitions. They completed the questionnaire in less than 30 minutes, and also provided verbal feedback on its layout, content and readability.

Following the pilot a number of revisions were made and the questionnaire was again reviewed. This time it was analyzed by three doctoral candidates from the Department of Educational Administration. Their task was to fine-tune the layout and format of the questionnaire. Minor revisions were made at that time.

Administration of the Questionnaire

Bogdan and Biklen (1982) noted that "the first problem to face in fieldwork relations is getting permission to conduct [the] study" (p. 120). Permission was not a significant issue in this study because potential responders were available throughout Canada and in numerous organizations. Ultimately, it was the responders and not their organizations who decided whether they would participate in the study.

However, the issue of 'access' **was** a problem and demanded so much attention that it caused the questionnaire to be administered over a period of five months. The difficulty was that in each municipality, province or region no single individual or agency had a comprehensive list of those who were involved in the management of crises. Participant selection required, therefore, the use of the 'reputational' approach.

Hunter (1958) and Housego (1964) described the 'reputational' technique as one in which those who are knowledgeable in the research topic are asked to name important actors in that topic area as potential research subjects. Bogdan and Biklen (1982) described a generally similar process which they termed the 'snowball sampling technique.' The use of this technique involves sampling an initial segment of a population and through that contact expanding the sample. This study involved a mixture of both the 'reputational' and the 'snowball sampling' techniques. Participants were, therefore, selected in stages.

The first stage involved two key letters sent by senior local government officials (Appendix B). These letters were the door openers. The first letter was from Jim Hoffman, the Regional Director of Emergency Preparedness Canada (Alberta/NWT Region) to his colleagues in Ottawa and the Regions. The second letter was sent by Mark Egener, Managing Director, Alberta Public Safety Service (the provincial emergency measures organization) to his provincial colleagues across Canada. These senior federal and provincial government officials were selected because they were expected to have links into the local network of disaster responders and emergency managers. Both letters informed these officials of the study and requested their support when approached by the researcher.

Within weeks these public officials were again contacted, this time by the researcher. The letters (Appendix B) also included a list of disasters (Appendix C). Addressees were asked to identify potential respondents, namely those who were involved in managing all or a portion of the listed disasters.

The intent of these letters was to solicit as broad a response as possible to the questionnaire by creating interest in the study and generating an extensive list of potential respondents. The approach was successful but required a longer period of time than expected. The names and addresses of likely respondents were received as late as a year and a half after the initial request for them!

Responses to the initial request for contacts produced mixed data. Most of the responses indicated the name, address, and phone number of a person, as well as the disaster in which he or she was involved. However, in many instances, because people moved or their positions changed there were gaps in the data. These gaps had to be filled-in through additional investigation. However, fewer than ten names could not be followed and were discarded.

Individuals who were identified as potential respondents were registered on a data base. A cover letter (Appendix B) and the questionnaire were then sent to them. They were asked to complete the questionnaire and, where possible, identify "others who supervised or managed disaster response efforts." This approach generated additional names of people to whom a questionnaire was sent.

Two hundred questionnaires were sent during the five month period. One hundred and seventeen responses were received representing a response rate of 58.5%. Of these 14 responses were unusable.

Upon receipt, each questionnaire was numbered sequentially to indicate the order in which it was received. Responses were entered into two separate computer data bases. One included all quantitative responses, the other, all narrative responses. Included at the end of each response in the data base was a number identifying the questionnaire from which the response was recorded. This process permitted, where required, a verification of the response and its review in the context of the respective questionnaire's content.

The Interviews

Borg and Gall (1983) noted that "the interview as a research method in survey research is unique in that it involves the collection of data through direct interaction between individuals" (p. 436). They noted that this interaction provides both advantages and disadvantages to the study. They observed that "the use of the telephone in interview studies has greatly increased" (p. 446). They also provided a detailed discussion on the advantages and disadvantages of this methodology.

Riesman and Benney (1956) defined the interview as follows:

> A transitory relationship between two people, strangers to each other, in which one person seeks information from which he can derive no immediate personal advantage and the other gives it without suffering any disadvantage. . . . it aims, at its best, to reduce distance, avoid threats, and maintain esteem (p. 229).

Eisner (1991) noted that direct observation and interviews are the two most important research methodologies. He also wrote that

> It is surprising how much people are willing to say to those whom they believe are really willing to listen. In the main, interviews need not - indeed, should not - be formal, questionnaire-oriented encounters. The aim is for the interviewer to put the person at ease, to have some sense of what he or she wants to know, but not to be either rigid or mechanical in method (p. 183).

The need to have interviews as a follow-up to the questionnaires was established well before the latter were mailed. At the time of the initial mailout, the researcher expected that the questionnaires would provide valuable but broad data which would require a more detailed investigation. The best tool for such an investigation was believed to be the interview approach. The above expectation was confirmed when responses to the questionnaires raised a number of additional questions requiring more in-depth answers than those which were obtained in the questionnaire. Furthermore, the data provided the researcher with a broader perspective from which to seek more information.

Interview question development. Interview questions were based on the responses to the questionnaire. Five key questions were developed to form the framework of each interview. Each of these questions contained one or more follow-up questions that were to be used for clarification as necessary. These are listed below.

1. What does the term 'crisis management' in a community

setting mean to you? What are its key elements? Are they different from day-to-day management, and if so how?

2. In your experience was there a transition from day-to-day management to crisis management, and back again? If so, what were the triggers for this transition? What was the significance of these triggers and their consequences to your organization? Was the transition abrupt, gradual, or undetectable? Why?
3. What activities do you consider as critical to effective crisis management? Which of these activities would you say are unique to crisis environments? Which are significantly influenced by the disaster itself?
4. It has been said that "crisis management is in fact decision making in a crisis environment." What are your comments on this statement?
5. Did your needs for and style of communication change because of the disaster? If so how?

The intent of questions 1 and 2 was to initiate the discussion and draw out the pertinent context for the remaining responses. Questions 3, 4 and 5 were intended to provide the substance of the interview and the research.

The questions were piloted during the first interview and required little modification. Subsequent interviews involved nearly the same questions, and all concentrated on questions 3, 4, and 5.

Interview process and administration. Interviewees (Appendix D) were selected based on a variety of factors: their willingness to share their experiences through the questionnaire, their exposure to the functions of crisis management, and their availability. All but a few were approached in writing (Appendix B) or by phone.

Interviews were conducted along what Dexter (1970) called 'elite interviews.' Sometimes referred to as non-standardized interviewing, the process stresses the use of the interviewee's definition of reality. Interviewees are encouraged to introduce and explore the problem from their perspective. As suggested by Dexter, all information was recorded to ensure that all relevant data were captured. When the interviewees identified the information as 'confidential' it was either left unrecorded or was not transcribed. In any case it provided valuable context.

Twenty three interviews were conducted primarily by phone with the only exception being those who were available to attend a face-to-face interview in Edmonton. The initial 18 interviews involved all five questions. These interviews were tape recorded and often lasted between 40-90 minutes with the average duration being about an hour.

As soon as possible after each interview, either the researcher or a professional secretary listened to the taped interview and transcribed its contents. A tape-transcriber was used for that purpose. A copy of the verbatim transcription was then sent to the interviewee with a cover letter (Appendix B). Interviewees were requested to review the transcription of their respective interview and make changes in it as necessary so that it best captured their intended meanings. A number of the interviewees did alter their responses. However, in most cases these alterations were primarily cosmetic and helped make their response more direct.

On two separate interviews a tape recorder failure resulted in mostly inaudible tapes. These interviews were rescheduled and conducted successfully. This technical problem caused some frustration and delay but no other difficulties.

As the period of interviews came to a close it became evident that there were certain themes which could now be explored in greater depth. Also at that time there was a surge of nominations for participation in the study. The researcher decided to take the opportunity and selected five more individuals for second-level 'supplemental' interviews.

These were both face-to-face and phone interviews. They were of much shorter duration, typically lasting less than 30 minutes. The intent of these interviews was to explore the experiences of the interviewees and get a clearer understanding of what it is that crisis managers do. Therefore, Question 3 was the focus of discussion and was explored extensively.

The supplemental interviews were also recorded to allow for accurate recall in the capturing of individual statements. However, due to time limitations, no transcripts were made of the interviews or sent to the interviewees. The tapes were replayed by the researcher and select portions of their content were transcribed.

Issues of Reliability and Validity

Reliability and validity are critical issues in research. Rationalists have specific research methodologies which ensure and confirm the reliability of their findings. Lincoln and Guba (1985) noted that quantitative research demands internal and external validity, reliability, and objectivity. 'Internal validity' is the degree of 'truth' in the findings. 'External validity' or generalizability is the applicability of the findings to other groups or in other contexts. 'Reliability' is the element of consistency in the findings where the results can be replicated with same subjects and in a similar context. 'Objectivity' is the degree of neutrality of the researcher and the study's subjects from bias (p. 290).

Eisner (1991) asked "what does it mean to generalize?" He answered by writing that "generalizing can be regarded not only as going beyond the information given (Bruner, 1973), but also as transferring what has been learned from one situation or task to another" (p. 198). He added that generalization is often made on the basis of either *attribute analysis* or *image matching* (p. 201).

Lincoln and Guba (1985) remarked that the "naturalistic criteria of trustworthiness are open-ended; they can never be satisfied to such an extent that the trustworthiness of the inquiry could be labled as unassailable" (p. 329). However, they argued that the naturalistic research methodology provides trustworthy tests of reliability and validity. They noted that "there are techniques the naturalists can employ that, while they fall short of quaranteeing balance and fairness, can nevertheless provide a system of useful checks and balances" (p. 110).

Guba and Lincoln (1981, 1982) and Lincoln and Guba (1985) argued that the terms--internal validity, eternal validity, reliability, and objectivity--of the rationalistic paradigm, can be easily translated into a naturalistic paradigm. These terms then become: Credibility, transferability, dependability, and confirmability.

Guba and Lincoln (1982) and Lincoln and Guba (1985) recommended a number of steps which would enhance the credibility, transferability, dependability, and confirmability of naturalist research. These included: Prolonged engagement at a site, persistent observation, peer debriefing, triangulation, referential adequate materials, member checks, theoretic and purposive sampling, thick descriptions, stepwise replication (or the split-halves approach), audits, and practising reflexivity.

Credibility. Guba and Lincoln (1982) noted that when checking for credibility "the crucial question for the naturalist becomes, 'Do the data sources (most often humans) find the inquirer's analysis, formulation, and interpretations to be credible (believable)'?" (p. 246).

The data sources in this study were supplied through the 'reputational' technique. As such, they were nominated to the study by those in the know of disaster management in general and of the response effort to individual disaster incidents in specific.

Guba and Lincoln (1981) recommended that researchers use 'member checks' whereby participants review the data which they supplied to ensure the accuracy of its meaning and interpretation. They suggested that this technique also helps respondents recall items which they may have overlooked during the initial data collection process.

The 'members check' technique was employed in nearly all interviews. Interviewees were each sent verbatim transcripts of their interview and were asked to comment or modify it as necessary. Many but not all did take the opportunity to amend their statements.

Another credibility check of the data was the triangulation performed through the interviews. The researcher often used comments made by previous respondents to get the reaction of the person being interviewed. This and other applications of triangulation helped ensure the 'credibility' of the data, or, their 'structural corroboration' as Eisner (1991) suggested.

Transferability. Guba and Lincoln (1982) stated that transferability is deemed to exist "if enough 'thick description' is available about both 'sending' and 'receiving' contexts to make a reasoned judgement" about the transferability of findings (p. 247).

One of the key objectives of this research was to provide a 'thick description' of the management of a crisis in a community regardless of geography, type of disaster, culture, organizational and professional background of the crisis managers, or environmental factors. To that end, respondents were selected so that they represented a cross-section of geographies, organizational backgrounds, and disaster experiences. It was intended that this variety should assist the researcher to triangulate the data and distil them to eliminate bias.

Dependability. By dependability, Guba and Lincoln (1982) meant stability of the findings "after discounting such conscious and unpredictable (but rational and logical) changes" (p. 247). Yin (1984) noted that dependability can be enhanced through the use of multiple sources to "essentially provide multiple measures of the same phenomenon" (p. 91).

This study provides multiple measures of the same phenomenon--namely, the management of municipal disasters. Its data focused time and again on the experiences of individuals who played key roles in the process. Their descriptions were included in the report through many quotations and stories and provided a rich tapestry of knowledge.

Confirmability. By this term, Guba and Lincoln (1982) and Lincoln and Guba (1985) meant the objectivity of the data, **not** the researcher. This objectivity can be ascertained through triangulation, audits, and prolonged reviews using as many sources as possible. Owens (1982) noted that "whereas the rationalistic methodologist might pursue confirmation through the use of data from a number of subjects, the naturalistic methodologist often seeks to confirm through the intensive study of a small group or even a single individual." (p. 10). This research concentrated on a select, yet representative sample of the population.

Yin (1989) recommended "maintaining a chain of evidence . . . [permitting observers] to follow the derivation of any evidence from initial research questions to ultimate case study conclusions" (p. 102). This audit trail was maintained throughout the study. It involved the recording of various pieces of correspondence, all raw data, interview guidelines, and other supportive documentation (Owens, 1982, p. 13).

Data Analysis

This section outlines the procedures used to analyze the data gathered through the questionnaires and interviews.

Eisner (1991) noted that "in qualitative inquiry *numbers are okay*. . . . although a study that did *nothing* but count or measure qualities would not be a qualitative study" (pp. 186-187). The deciding point should be whether the necessary description is enhanced by numbers. Eisner (1991) and Bogdan and Biklen (1982) noted that the qualitative data should be scrutinized through a set of codes or schema which would help structure the data and provide them meaning.

Bogdan and Biklen (1982) noted that

> Data analysis is the process of systematically searching and arranging the interview transcripts, field notes, and other materials that you accumulated to increase your own understanding of them and to enable you to present what you have discovered to others. Analysis involves working with data, organizing it, breaking it into manageable units, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others (p. 145).

The quantitative and qualitative segments of the data were analyzed separately.

Quantitative Analysis

The quantitative data were generated solely by the questionnaire. They were entered into a computer's data base and were analyzed for frequencies and cross referencing purposes. Responses were first grouped by specific questions, and then separated by responder's background (police, fire, medical, municipal, government, and industry). In both cases the data were searched for themes and patterns which in turn provided the basis for the 'thick description' included in the final report.

Qualitative Analysis

The data for the qualitative portion were derived from responses to both the questionnaire's open-ended questions and the interviews. The data were searched for patterns and themes. Its contents were analyzed within the various contexts of the professional background of responders, types and geographical locations of the disasters experienced by the respondents, and the organizational roles played by these individuals within their respective agencies. Each of these contextual analyses provided another layer in an overall 'thick' description of the essence of crisis management.

The analysis of the qualitative data included many statements made by the various respondents. The respondent's name, position title, and organization were also provided. This information provided meaningful context to the quotation. Often, it indicated the organizational and professional orientation of the respondent.

Summary of Chapter 5

This chapter contained a discussion of the research design and methodology, as well as data analysis. Also discussed within this context were the focus and nature of the study, the two research tools employed by it, and the reliability and validity of its data.

The design and conduct of this study was based on the qualitative or naturalistic paradigm. It began with a general notion which was further defined and honed through the process of data collection. Its data were collected through two key instruments--questionnaires and interviews. The data reflected the experiences, impressions and interpretations of individuals. The final report mirrored their input through the process of story telling.

The study was conducted with utmost effort to ensure that its data be trustworthy--credible, transferable, dependable, and confirmable.

CHAPTER 6

Description of the Population

This chapter describes the respondents to the study. It begins with a description of the broad tapestry of emergency planners and disaster responders at federal, provincial, municipal, and non-government organization (NGO) levels. Each of these structures is described separately and in that order. This description is vital to the understanding of the study's findings because it provides a context for the response network, its components, and their linkages to the management of disasters at the community level.

A more specific description of the survey population follows, with an explanation of how participants were selected. The chapter also addresses the significance of this population to the research findings.

An Overview of the Population

Emergencies, disasters, crises, and catastrophes are usually responded to by a myriad of formal and informal agencies and organizations. Many of these organizations represent the core structures of response--police, fire, ambulance, and government. Others, such as volunteer groups, may come into being only for the duration of the disaster. Each of these social structures exists at every level of human habitation from its broadest and global sense (e.g., the United Nations) to its most minute organizational level--the family unit.

Emergency preparedness and response in **Canada** is based on a framework of various organizational structures, each with its own authority, roles and responsibilities. In its simplest form, this framework can best be explained along four distinct levels or categories: federal, provincial, municipal, and industry/NGOs. The NGOs, or non-government organizations, are often involved due to their ability to help 'government' during disaster operations.

Each of the four levels of response are described in a separate section below. However, this division is artificial and made solely to assist in the description of the role associated with each level. During large scale disasters, organizations from all four levels provide the necessary response effort. Typically, each organization manages the crisis at two distinct levels. One is to manage the effect of the disaster on and within the organization, the other at a community level using the combined 'team' approach. The response to a disaster is, therefore, more a tapestry of collective inputs than a distinct and unique effort of a single organization.

The Federal Government

Every nation-state has an agency of government which has, implicitly or explicitly, responsibility to prepare for and respond to the country's national emergencies. Typically, this agency is either that country's military organization or a specified government department. In Canada, that government agency is Emergency Preparedness Canada (EPC).

Federal 'presence' may be felt, directly or indirectly, in all emergency preparedness efforts at federal, provincial, and municipal levels. This involvement is so extensive that it warrants specific analysis from each of the various geographical perspectives: national, regional/ provincial, and municipal.

National. The impact of the federal government on Canada's emergency preparedness efforts is based on a number of key aspects. These aspects include: a federal policy statement on emergency preparedness and response; the presence of a statutory obligation by each federal department to prepare for the resumption of its primary services following a disaster; and the passage of two key statutes--the *Emergency Preparedness Act and the Emergencies Act.*

In October 1980, the federal government enunciated its policy which began with the following two paragraphs:

> Within Canada, all citizens have a responsibility to know and understand the types of emergencies they may

> face and, to the extent practicable, be prepared to meet them. In addition, all levels of government have a responsibility to plan and prepare for emergencies which are beyond the resources and capabilities of individual citizens.
>
> Government planning is most effective when the responsibilities and aspirations of the federal, provincial and local government are merged through joint cooperative planning into mutually acceptable arrangements covering the preparation for, the response to, and treating the consequences of emergencies (p. 1)

In 1988 the federal government enacted *the Emergency Preparedness Act* and the *Emergencies Act*. The two Acts provided the organizational and conceptual framework for federal response to national and provincial emergencies.

The *Emergency Preparedness Act* achieved two important objectives. One, it established Emergency Preparedness Canada (EPC) as the key federal agency responsible to **co-ordinate** emergency preparedness and response efforts at federal level. Two, **each federal department and agency** was mandated to prepare for emergencies which would affect its own operations or its ability to assist other federal or provincial departments. Naturally, this responsibility has provincial implications which will be discussed in the following section.

Additionally, certain departments such as Transport Canada, Health and Welfare, and Environment were identified by the Privy Council Office (PCO) as 'lead agencies' in disasters affecting their primary mandates. As an example, Environment Canada may take a lead role in disasters with environmental impact on federal jurisdictions. In such cases Emergency Preparedness Canada is mandated to provide coordination and support as necessary.

The Emergencies Act, which replaced the controversial *War Measures Act*, established four categories of emergencies each with its own delineated level of response. The Act also made available the extraordinary powers required to respond to a disaster, where such powers are not available through other statutes.

Disaster response at the federal level also includes a number of specialized agencies. One of the more obvious ones is the Canadian Armed Forces and its facilities (e.g., the Search and Rescue capacity). Other agencies include the National Search And Rescue Secretariat, CANUTEC which deals with major dangerous goods incidents, and the Canadian Coast Guard.

Emergency Preparedness Canada (EPC) also provides a valuable national coordination function to all non-government organizations (NGOs). These NGOs include the Canadian Red Cross Society, St. John Ambulance, and the many organizations which are drawn into disaster response efforts at federal or provincial levels. Naturally, the linkage at the federal level is between the national headquarters of each of these organizations and EPC.

Regional/Provincial. In nearly all cases, the responsibility of each federal government department and agency to prepare for disasters is decentralized to the regional office of the department. Some federal departments are 'regionalized' along provincial lines. Often, B.C. and the Yukon are grouped together as are Alberta and the NWT. However, there are many situations where the 'regions' include a number of provinces. For example, the Prairie region of some agencies may include Alberta, Saskatchewan, and Manitoba.

Regardless of their geographical boundaries--regional or provincial--federal departments have offices outside the Capital Region, in the provinces. These regional arms of the various federal departments provide, on an on-going basis, the operational output of their departments. Examples include the services provided by Atmospheric Environmental Services, Search And Rescue, Transportation, Environment, Agriculture Canada, and the Canadian Coast Guard. During disasters these regional offices provide two key types of goods and services: those which they are mandated to provide as regional offices, and access to other federal goods and services located externally to the region.

When federal departments have offices outside the capital region, they become what Jim Hoffman--EPC Regional Director (Alberta/NWT Region)--called the 'local state.' He noted that as part of the 'local state,' federal offices become part of the community in which they exist.

EPC has a Regional Director in every province. The Directors' primary emergency preparedness roles are that of co-ordination. They co-ordinate the emergency preparedness efforts of federal representatives in their regions, and also coordinate federal preparedness and response with the respective provincial government. These Regional Directors are the critical linchpins linking two large networks--federal departments and resources on the one hand and provincial jurisdictions and capabilities on the other.

Community. As mentioned above, when federal government field offices exist within a community they become part of the 'local state' and are often depended upon during disasters to provide necessary goods and services. Examples of such arrangements abound. Offices of Agriculture Canada are automatically involved in disasters affecting the local community's cattle stocks. Environment Canada's offices provide weather warnings and forecasts. Canada Employment and Immigration Commission offices can provide data on available labour resources and skills.

There are a number of unique circumstances where federal presence is geographically specific to the municipality. Examples include port authorities, airport authorities, ports of entry, and military bases.

Provincial

Each province, within its constitutional authority, has specific jurisdiction over its own emergency preparedness and response. Furthermore, federal actions in either national or international emergencies do not subsume provincial jurisdiction *unless* the provincial government is incapacitated.

There are many similarities between provincial and federal emergency preparedness efforts. Each province has legislation, like the federal *Emergency Preparedness Act,* which creates a provincial agency with the mandate to prepare for and respond to disasters within the province.

These organizations have different titles. These are the Provincial Emergency Program (B.C.), Public Safety Services (Alberta and N.B.), Emergency Planning (Ontario), Securite publique (Quebec), and Emergency Measures Organization for all the other provinces. However, regardless of the differences in their name, they generally have similar roles. Like EPC at the federal level, these provincial organizations are mandated to coordinate the emergency preparedness efforts of their governments. Some are also tasked with operationally oriented efforts (e.g., search and rescue) on behalf of their provinces.

All provinces also have legislation which governs the roles and responsibilities of their municipal authorities and key emergency responders: police, fire, and ambulance services. Typically, each province has its own training facility for members of these tri-services. In addition, Alberta and B.C. each have their own provincial training institute which provides relevant training for those who will manage or respond to disasters.

Municipal

As mentioned above, federal and provincial field offices located in a community become a part of the 'local state.' Consequently, municipal disaster preparedness and response efforts may involve--directly or indirectly--representatives or resources from all three orders of government. However, government emergency preparedness and response in Canada is in the first instance the responsibility of the elected officials of the affected municipality. Provincial and federal governments are mandated to provide support when disasters overwhelm municipal capabilities.

Most provinces have legislation which **mandates** their municipalities with the tasks of preparing for emergencies **and** of responding to these emergencies when they occur. The following may constitute a 'municipality:' city, town, village, summer village, hamlet, park territory, improvement district, municipal district, Metis settlement, native band area, or national park.

Municipalities have many resources which could be used for disaster response. These resources may be categorized into three groups. The first group includes the resources which exist within the community and over which the community has direct authority. These include fire, police, and ambulance services, hospitals, school facilities, community halls, and public works and utility resources. These may be available on a day-to-day basis or as needed. The members of these organizations may be volunteers, full time employees, or a combination of both. In any case, they likely report to the elected officials through such positions as that of the city manager or town clerk.

The second group of resources are those which exist within the community but over which the community has no direct control. Examples include the local federal and provincial field offices and their immediate resources. Other examples include volunteer groups, field offices of non-government organizations (NGOs), and the private sector. However, these resources may only be accessible as required and if available.

Municipalities often join in 'mutual-aid agreements' with other municipalities or members of industry. These agreements assure signatories to the agreement the support of their municipality or industry in term of need.

The third category includes the resources which are located outside the boundaries of the municipality and remain outside its jurisdiction. Examples of such resources include those of the provincial and federal governments, the private sector, the extended network of NGOs, and possibly even international organizations such as the Red Cross, international rescue teams, and environmental specialists.

As mentioned in Chapter 3, disaster response in a community may involve a convergence of all of the above resources onto the site of the disaster. In such situations, the municipal 'crisis team' may have to respond to or coordinate with a diversity of organizations, resources, procedures, value systems, and cultures.

Typically in Canada, when external resources are brought to assist a community in crisis, personnel from these resources serve as 'advisors' to the local crisis team. There are exceptions to this rule. However, as mentioned above these exceptions are few and rare.

NGOs and Industry

NGOs. Many non-government organizations have offices throughout Canada. These field offices have functional links to their organizations' national headquarters, and where applicable also to their regional offices. A field unit may have operational links to the emergency preparedness structure within the local community. Typically, however, the degree of inclusion of these NGOs in community emergency planning and response varies from community to community. It depends on the reputation of the NGO, the historical working arrangement, and the willingness of the community to include yet another player in its crisis team.

Some NGOs, like the Red Cross Society or St. John

Ambulance also have international linkages. During high-risk (i.e., large-scale) disasters, these contacts permit a much faster international response to community needs.

Industry. Like NGOs, industry has resources, contacts, and skills which become invaluable during a community's disaster response efforts. Large corporations, like national and international NGOs, have their own internal procedures and contacts through which they can access an extensive range of resources. Similar to federal and provincial field offices, industrial sites at the community become part of the 'local state' and are often an immediate part of the disaster environment. Like NGO staff members, industrial site personnel may become participants of the community response (or 'crisis') team. While the degree of their involvement varies, the trend during the last decade has been for industry to become less isolated and more active as a responsible corporate citizen.

Generally speaking, the chemical industry in Canada have come under pressure to enhance its safety standards and practices. Two disasters served as a grim reminder of the consequence of the failure to ensure safety. These were the Missisauga, Ontario, train derailment in 1979 and the Bhopal disaster in 1984. Following the Bhopal disaster a government-industry committee was formed under the auspices of Environment Canada. Its task was to assess the likelihood of a similar disaster occurring in Canada. In

1986 the committee issued its report which concluded that the hazard of major industrial accidents does exist in Canada. The report also contained 21 recommendations to enhance the ability of government and industry to prepare for and respond to such disasters. In 1987 the Major Industrial Accidents Council of Canada (MIACC) was established to implement these recommendations.

MIACC included representatives from federal and provincial governments, as well as various industrial associations. The establishment of MIACC was also a conscious effort to provide a mechanism for cooperation among members, and to provide an alternative to government regulations. MIACC has been instrumental in enhancing the emergency preparedness of its members and their willingness to become partners with their 'local state.'

In many instances industrial sites and their local community are joined by 'mutual aid agreements' where a need of one will bring about assistance from the other. Such mutual aid agreements are a useful part of the planning process. They also facilitate appropriate disaster response by reducing the need to communicate and make decisions during the worst period of the disaster response.

Organizational Culture

The response to a large-scale disaster in a community will typically involve a wide array of organizations.

Representatives of federal, provincial and municipal government departments and agencies will form the backbone of the response. However, they will **not** be alone. The overall response effort will likely include various NGO and industry representatives and volunteer groups from inside and outside the community.

The range of organizations and jurisdictions will be reflected by an equally diverse set of organizational cultures. This cultural spectrum reflects formality and rigidity of structure at one end, and informality and loose structure at the other. The former may be typified by the military and para-military organizations such as fire, police, and to a lesser degree, ambulance services. At the other end are volunteer organizations such as the local religious/ community groups and clubs. They may be called to assist due to their unique resources, or might simply appear because of 'community spirit.'

It is not uncommon for those who are regularly involved in emergency planning and response to have had experiences with other than their current organization. For example, those who are fire fighters now may have had military experience or served with an ambulance service as emergency medical technicians (EMTs) or paramedics. Municipal emergency planners or 'directors of disaster services' may have arrived at their position via the military, police, fire, ambulance, or less frequently from industry.

It is, therefore, very difficult to generalize about the 'organizational culture' of emergency responders other than to say that they typically have the same primary value: They are there to 'help!' Their activities in a disaster may be typified by their intense desire to do their best to save lives, sometimes at the cost of their own. However, 'how' they reach that goal, and 'what' organizational structure they adopt is as varied as their professional background(s).

The cultural diversity of responding organizations is further complicated by their complex web of jurisdictions. As mentioned above, the response to each disaster may involve all three orders of government as well as some NGOs and Industry. Each of these general groups may have its own jurisdiction in the disaster response effort. Each may also have separate departments and agencies whose jurisdictions overlap, generate conflict, or fail to address the requirements of the situation. These argue strongly for **'coordination'** among the groups involved in the operation.

The Study's Population

This section outlines the population of this study. It describes in sequence the respondents to each of the following: questionnaire, initial interview, and secondary interview.

Respondents To The Questionnaire

As mentioned in Chapter 3, two hundred questionnaires were sent and 117 were returned. Of these, 14 were unusable leaving 103 available for response analysis.

Organizational association. Every effort was made to ensure the greatest possible distribution of the questionnaire. The aim of this effort was to ensure the representation of responders from all provincial jurisdictions, as well as the various response organizations.

Respondents were asked: "To which organization did you belong during the disaster? (Check the *most* appropriate response)." Their responses are detailed in Table 6.1.

Table 6.1
Breakdown of Questionnaire Respondents
by: Organizational Association in Disaster

Organization	f	%f
Ambulance	4	3.9
Military	2	1.9
EPC and provincial EMOs	26	25.2
Other government departments	30	29.1
Fire	14	13.6
Police/RCMP	15	14.6
Hospital	2	1.9
Rail Company	3	2.9
Industry	2	1.9
Red Cross	1	1.0
Other organizations	4	3.9
Totals	103	100.0

It should be noted, however, that many respondents identified experience and involvement in more than one of the organizations listed below. For example, a fire fighter was involved in both fire and ambulance services. Furthermore, the organizational association identified by respondents could have been current or reflected their association up to ten years prior when they were involved in a disaster.

When respondents identified association in more than one organization the researcher relied on his knowledge of the responder or his/her organization to determine the primary organization. For example, a fire fighter on a military base was identified in his primary role as a 'fire fighter.' Similarly, those in municipal government departments or agencies were grouped under the heading 'other government departments.' When such a determination could not be made the respondent was classified under the heading 'other organization.'

Disaster experience. Respondents were asked: "Which of the following disasters have you experienced? (Check as many as are appropriate)." The responses are outlined in Table 6.2.

It is worthy of note, however, that these responses reflect a multitude of realities. Some individuals identified only one type of disaster which may or may not be their only disaster related experience. On the other hand, many respondents reported being involved in numerous types of disasters. These multi-responses may reflect many incidents OR one multi-faceted disaster such a major fire in an industrial setting and involving dangerous goods.

Despite the weakness of its data for the purpose of generalization, Table 6.2 illustrates the breadth of exposure which respondents had in their disaster experiences. In a broad sense, the Table also illustrates the types of hazards which are prevalent in Canada.

Table 6.2
Breakdown of Questionnaire Respondents
by: Disaster Experience

Disaster Type	f	%f
Air Crash	21	20.4
Flood	45	43.7
Maritime accident	4	3.9
Storm	36	35.0
Dangerous goods	40	38.8
Industrial accident	20	19.4
Rail accident	31	30.1
Structural collapse	7	6.8
Earthquake	1	1.0
Major fire	50	48.5
Slide (mud/snow)	2	1.9
Terrorist act	9	8.7
Others	20	19.4

Disaster role(s). Many respondents did not indicate, as requested, their primary and secondary roles during the disaster which they experienced. Those who did reported a wide range of responsibilities. Furthermore, the researcher knows from their titles, organizational affiliations, and 'background information' that many of the respondents held responsible disaster roles.

Year disaster experienced. Respondents were asked to identify the year in which they experienced a disaster. Where more than one year (and disaster) were provided, the researcher took the most current date. Table 6.3 illustrates the most recent exposure of respondents to disaster.

Table 6.3
Breakdown of Questionnaire Respondents
by: Year of Latest Disaster Experience

Year	f	%f
1973-84	5	5.1
1985	7	7.1
1986	5	5.1
1987	7	7.1
1988	11	10.7
1989	14	13.6
1990	13	12.6
1991	18	17.5
1992	19	18.4

It is noteworthy that 94.9% of responses related to the period 1985-92 inclusive which was the intended time frame of the study. Furthermore, 75.8% of respondents related to disasters which took place during the five-year period preceding the study. This factor is significant in that respondents are expected to remember their behaviour during the disaster event.

Willingness to 'go on record'. Respondents were asked: "May I quote you in my report?" A total of 87.4% of them answered 'yes.' Some explained that the information which they provided was 'sensitive.' Others wrote that they were occupying politically sensitive positions and could not be seen to be critical of those who managed the disaster.

Population of the Primary Interviews

A total of 18 individuals participated in the primary interviews. A number of factors influenced who would be selected for these interviews. One of the primary factors in selecting the interviewees was their enthusiasm in responding to the questionnaire. Those who wrote in-depth responses to the questionnaire's questions were deemed to be highly motivated and keen on the topic area. It was assumed that they would be particularly willing to share their knowledge and their time for an interview. This assumption proved accurate in all cases.

A second factor in interviewee selection was their availability--from both schedule and geographical perspectives--for an interview. Table 6.4 identifies the organizational backgrounds of those who were involved in the first round of interviews.

All of those who were interviewed first were government employees in some capacity. Their selection was not coincidental. It was based on a decision to concentrate on those who were the ultimate key players in the management of disasters at municipal, provincial or federal levels. Since the management of disasters is within the government's jurisdiction it follows that government employees will have the best 'view' of the management of these extraordinary events.

Table 6.4
Breakdown of Primary Interview Respondents
by: Organizational Affiliation

Organization	f	%f
EPC/Provincial EMO	7	38.9
Municipal government	3	16.7
Other government dept.	4	22.2
Police	3	16.7
Fire	1	5.5
Totals	18	100.0

The third factor in the selection of interviewees was based on an attempt to get a cross section of all provinces. Table 6.5 provides a breakdown of the interview population by province of residence. As indicated the majority of respondents were from Alberta. However, despite their similar geographical base they represented a cross-section of organizations and government levels.

Table 6.5
Breakdown of Primary Interview Respondents
by: Province of Residence

Province	f	%f
Alberta	10	55.6
Ontario	3	16.7
Manitoba	2	11.2
British Columbia	1	5.5
Saskatchewan	1	5.5
Nova Scotia	1	5.5
Totals	18	100.0

Population of the Secondary Interviews

A total of five additional interviews (Appendix D) were conducted as a follow-up to the primary ones. The key difference between the two sets of interviews was their length. The secondary interviews were typically more focused and required approximately half as long to conduct.

This group of interviewees included the head of EMO (Manitoba), a Vice-President from Novacor, a representative from the Alberta Fire Training School, and two other experienced responders from Alberta.

Summary of Chapter 6

This chapter described the respondents to the study. It provided a description of the broad network of emergency planners and disaster responders at federal, provincial, municipal, and non-government organization (NGO) levels.

Each of these structures was described separately and in that order, to provide a context for the response network, its components, and their linkages to the management of disasters at community level. A more specific description of the population was then provided.

CHAPTER 7

Analysis of the Findings Related to the Context of Crisis Management

This chapter and the one which follows it describe the findings of the study. In this chapter are the findings which provide the context for the process of managing a crisis in a community. The components of the process are detailed in Chapter 8.

Each of the two parts of this chapter is based on respondent comments. The first part provides an overview of the crisis management process. It contains a discussion about when the process begins and ends, and how it is likely to be 'triggered.'

The second part includes a review of findings on how disaster affects the crisis manager's organization during the initial period of the disaster. Responses are discussed and the differences among the professional groups are noted.

An Overview of the Process

Described in this part is the context of managing a large-scale disaster in a community. It begins with a description of disaster as provided by respondents. Also discussed is the disaster period--its beginning and end--and the events which seem to define it.

What is a Disaster?

The first question which respondents were typically asked during their interview was "What is the definition of crisis in a community setting?" Mark Egener--Managing Director, Alberta Public Safety Services--observed that "crisis can be a really misunderstood term, and it is a very subjective term. You can have crises for all kinds of things." He used the term 'high-risk end' crises to define those unique events which significantly affect a community's infra-structure. As noted below, the responses provide a rich description of high end crises, containing few differences of perception and many common themes.

For example, nearly all respondents noted that crises were events which contained a great deal of real or anticipated hazard to life, property, or the environment. Consequently, as Mark Bennett--City of Winnipeg, Emergency Coordinator--observed, they "are events that require quick response to deal with [the] hazards." Bill Weagle--a manager with EMO Nova Scotia--observed that a disaster has a number of unique characteristics. It is "very quick, very untimely, sometimes unknown, sometimes very abrupt, and quite often it is something that exceeds your resources."

Sam Baird--Chief, Crisis Management Division at Environment Canada--observed that, from the perspective of a federal government department, crisis management is the "depoliticization of an event." He added that typically fewer than 50% of the risks encountered by his department are associated with environmental issues, and the rest are institutional risks. What typically makes an event a 'crisis' is its politicization, or the attention which it receives from the public or the media, and the political attention which it generates.

Jim Hoffman--EPC's Regional Director Alberta/NWT--added the aspect of 'order and good government.' He observed that "as long as there is not a major risk to public health and safety or 'order and good government' and the management structures and capabilities can function adequately to meet any of the needs [of the community] then [the event] is not a crisis."

Many of the respondents viewed crises as events which overwhelm community resources and tax them to the limit. All respondents agreed that no single organization can effectively respond to a community wide crisis, and that effective response efforts required concerted multi-organizational and multi-jurisdictional 'team' approaches.

Mark Egener observed that a lot of disasters occur with alarming regularity and often at awkward times like a long weekend. He also stated that in high level disasters

> the systems that you rely on in your normal way of handling emergency situations or routine crisis do not exist in a disaster or catastrophes. Your communication lines are probably not there,

> organizations are not accessible and functioning in the way that you would normally expect them to be functioning, or that you would rely on for services in a normal event. I think that there is an important differentiation to make at the high end of the scale because you are dealing in a vacuum. Even things like your own office support systems may not be able to help you, your computer system and your data may not be there, your telephone may not be there, your people may not be there.

Don Campbell--EPC's Assistant Regional Manager, Alberta/NWT--discussed crisis management from an organizational behaviour perspective. He observed that "the most basic definition of crisis management is one which implies a management structure to deal with a situation beyond the normal resources of a community, and one which draws together more disparate elements of the community resources to deal with" it. He noted that "the scale or the scope of these resources . . . [and] the speed or the urgency with which these resources are required" also help define a situation as a disaster.

Another major theme among responses was the significance of the element of time or, more precisely, the shortage of time in which to get the job done. All respondents reported a lack of time to analyze the crisis situation, discover the appropriate response or solution, communicate effectively, and undertake the appropriate and necessary action. It was unanimously agreed that the lack of time was the greatest stressor for crisis managers and responders.

The terms 'unusual' 'new' 'unique' and 'extraordinary' were used often to describe crises. Moreover, all respondents noted that crises require that crisis managers and their team members perform unusual roles or achieve their usual duties in unusual ways. Greg Smith--Mines Specialist with Alberta Occupational Health & Safety--echoed nearly everyone's sentiment: "[A crisis] is something which overpowers the normal mechanisms for doing business. And, it really is a situation where the normal methods of doing business are not designed to handle it."

Another reported major element of crises was the increased need for effective communication. Wayne Marr--Executive Director, Saskatchewan EMO--observed that

> there is an extreme amount of information required both by [those] responding to the situation and by the general public asking questions about their own personal safety or the safety of their families. Either of those particular areas are normally not handled on such a large volume. In the crisis situation the answer has to be there immediately.

Dr. John Butt--Alberta's Chief Medical Examiner--noted that crises involve "problems which come up acutely" or situations which contain a strong emotional context. He observed that the former is more likely to be the case in community disasters. He stated that 'acute' situations are ones which evolve rapidly or ones which are relatively new in nature.

Don Campbell observed that the element of 'newness' can also be a major shift in procedures. "It is a major crisis for us if we have to get into a 24-hour operation. Most organizations have a fairly limited staff, if anyone at all, available after normal business hours. It is easy to define an event as a crisis when you start calling people back" to work, he said.

When Did the Crisis Management Process Start?

One of the questions asked in the questionnaire was: "What activities would you consider were the start of the crisis management process in the disaster which you experienced?" Nearly all respondents (83%) addressed this question. Their responses highlighted three key patterns. These may be generally categorized as: the onset of the incident, being 'called-out', and being overwhelmed. Each of these is discussed separately below. In many instances, respondents reported a combination of two or three of these categories.

Moreover, many of those who were interviewed observed that one's involvement in the process depended to a large degree on one's level in the response organization. As Ron Wolsey--APSS Executive Director, Disaster Services--observed, many disasters often involve at least two levels of management. One at the site and the other at the someone's headquarters. He remarked that in some instances there may be a third level of management depending on the functions involved. Ron observed that the roles at the scene are "to gather information, possibly assess and act in relation to that information, advise the second tier of management as to what is going on, and accept whatever direction they may be provide in terms of response to the disaster."

The onset of the incident. One stage at which respondents felt they began participating or implementing a crisis management process was at the onset or impact of the disaster with which they were involved. This category of initial involvement may be further subdivided into two separate patterns. One involves the threat of a looming disaster, the other the actual impact of the disaster.

Some of the respondents noted that their involvement with a crisis management process started with the threat of the disaster. One respondent wrote of having a "warning of [the] event ... [with an] instant call to duty." Others wrote of receiving reports of an approaching tornado, rising flood waters, intensification of a forest fire hazard, or a general alert to be on 'stand by.'

Regardless of the nature of the event, respondents were aware that they were needed and that they were being called to respond to an extraordinary event. They were being asked to either perform, or be ready to perform, their unique skills as part of their organization's response to the disaster. These requests came from various sources. Some respondents were alerted by their organizations through their respective headquarters, dispatchers, and operation centres. Other respondents were notified by the headquarters, dispatchers, and operation centres of other organizations. A few were advised by the media, colleagues, and other professional contacts.

Some respondents were launched into a crisis management mode through the actual impact of the disaster. These individuals wrote that their crisis management process started with the impact of the disaster which was, on only some occasions, preceded with a warning.

Those at the scene of the disaster are typically the first to initiate a crisis management process. Almost simultaneously, those who support them at the various headquarters are also busy trying to implement their end of the process. Mark Egener provides a vivid example from the July 31, 1987, Edmonton Tornado.

> Thinking of the Edmonton tornado, which was a local high-end crisis, there was absolutely nothing, in the early stages, that the city or the provincial government could really do to influence the response. Nobody knew what was going on. So, people began to gear-up for what they perceived their roles to be. The management function, at the municipal level at that time, was to prepare for situation where they could communicate with their resources and coordinate them. That was obviously going to be several hours away. That is what they did. They, the city and the city manager, geared themselves to assume control when they could and did not spend a lot of time wasting energy trying to control what they could not control.
>
> There were a lot of people scattered about in a lot of sites, doing things , and nobody knew what they were doing. Nobody knew where the casualties were going, how they were getting there, what the police were doing, where the fire resources were, and there was some time before that began to be clarified. When it began to be clarified there were some clear definition of the problems that they were facing.

Being 'called-out'. Many respondents wrote that they were called out to a site and upon arrival realized that they were responding to more than a routine call. They reported that upon arrival at the site they were confronted by situations which extended their day-to-day operational procedures to the limit.

A number of respondents identified the "request for service" or "help" as the start of their crisis management process. They identified themselves as parties to mutual aid agreements, as well as members of provincial and federal departments. Moreover, some reported being asked for help while others were the ones who responded initially, realized that they were unable to perform their role unaided, and asked for assistance.

One person reported that the start of the process was "getting key personnel together." Another wrote that it was "senior level commitment to do something." Others noted that it was the decision to set up a regional command centre, and implement the emergency plan. For that reason, two individuals noted that the crisis management process began effectively with the start of the planning process.

Being overwhelmed. For many respondents the 'real' process of crisis management began when their and other response organizations were overwhelmed by the response effort.

Some respondent noted that it was insignificant whether they were at the disaster site at the time of impact or were dispatched to it afterwards to assist. They observed that at a certain point in the operation all efforts seemed to be reactive, chaotic, and fruitless. It was at that time that a crisis management process was seen as essential and was often implemented.

What Triggered the Crisis Management Process

As mentioned above, one of the sure triggers that activates a process of crisis management is when an organization is being overwhelmed by the requirements of disaster response. Most respondents made reference to being overwhelmed and having to resort to a process other than their day-to-day operational procedure.

Sometimes the reality of operating beyond one's ability was realized slowly. At other times it became apparent immediately upon arrival at the scene of the disaster. Bill Weagle remarked that "it is one thing to talk about tornado clouds coming. It is a different thing to be siting there watching [the tornado] heading towards you." He noted that when confronted by the reality of a disaster, one typically has little doubt of the need for crisis management.

Dan Rennick related his experience from the February 8, 1986 Hinton train accident. He noted:

> This was an accident scene that was 60 feet tall and . . . a 1/4 of a mile long. You can try to imagine two trains colliding with the combined force that is involved. But to see train cars stacked three and four

> deep . . . to think about it and to see it is two different things. Right off the bat [responders] knew that they were in trouble.

The identification of the need for a crisis management process invariably followed the realization that day-to-day resources and procedures would not be enough to respond adequately to the disaster. Dr. John Butt noted that "one of the most obvious [triggers] is time constraint" followed by a number of realizations. These include the realization that one is confronted by a novel situation, that there is an acceleration of one's normal activity, or that one's organization is rapidly getting out of control.

All respondents made reference to a change of pace in their activity level as they moved into their respective crisis mode. This shift in activity level was a strong indicator for them that they were, in fact, operating in a new and unique (crisis) environment. In all cases, there was an accompanying shift of focus from administrative, dogmatic, bureaucratic, day-to-day procedures to the seemingly more pragmatic field-related operations. However, different organizations displayed the shift of focus in different ways. Municipal organizations which were close to the scene of the disaster--fire, police, ambulance--immediately undertook field-related actions. On the other hand, organizations which were more distant from the scene, such as provincial and federal emergency measure organizations, were more likely to 'get ready' to assist.

Respondents from federal and provincial agencies noted an escalation of their attentiveness to the event, the collection and dissemination of relevant information, and the gathering of necessary resources for possible distribution. This level of hyperactivity was a signal that one was in a crisis.

Dr. John Butt noted that, in a disaster, getting into 'high gear' is coupled with an inability to predict a clear outcome of the process. Many agreed with that observation, adding that one of the triggers of a crisis management process is the inability to predict how things will turn out. That limitation is symptomatic of the uniqueness of the crisis environment.

Wayne Marr observed that there are many other indicators of the onset of a crisis management process. He noted that many of these indicators are the milestones established by the community or its organizations as part of their respective emergency planning processes. Such indicators often include a certain number of fatalities or injuries, a call-out for limited and unique resources, the utilization of organizational staff to the fullest, set activities like an evacuation of the community, and predetermined incidents such as dangerous goods spills, earthquakes, floods, air crashes, or other non-routine and abnormal incidents.

The June 1, 1988 flood in the Slave Lake (Alberta) area provides an example. John Tanchak--District Officer, APSS--reported that the community people "knew they had a potential [crisis] and they were dealing with it. . . . But, the real crisis started when the bridge started to go out and the water started rising rapidly. Then they knew they had a real problem", a crisis. Similar 'triggers' were described for train derailments, downed aircrafts, tornado touch-downs, and major spills or leaks of dangerous goods.

When Did the Crisis Management Process End?

Responses to the above question were as varied as the experiences of individuals. In essence, the return to 'normalcy', however defined, was the demarcation line between the crisis management process and normal operations. Other indicators of the end of the crisis management process were reported as the: return of extra resources acquired for the disaster, return of evacuees to their homes, evacuation of all injured and deceased, or clean-up of all debris and environmental hazards.

As one respondent aptly identified, the termination of crisis management is "when everyone's safety and well being were attended to and normal operations were adequate." However, as another respondent wrote: "A crisis may be over when there is no longer threat to 'public safety' but the crisis for government may continue after the 'recovery' phase of the disaster."

Many respondents also indicated that the process ended formally with the conduct of operational debriefings as well as the filing of reports. In a few cases these activities also signalled the dismantling of the response organization or its return to inactive 'stand-by' status.

The Nature of the Transition to and From Crisis Management

Respondents noted various lengths of transition periods between day-to-day and crisis operations, and vice versa. They also observed a number of aspects in the shift to crisis management that were absent in the return to normal operations.

The shift to crisis management. Respondents described their transition from day-to-day operational mode to crisis management mode using various time-frames. Most reported the transition to be rapid and almost instantaneous. However, many also observed that the transition can be slow, gradual, or barely perceptible. It all depended on the type of disaster. Some occurred 'fast and furious' like tornadoes, others 'crept-up on you' like rising flood water.

John Oakley--Emergency Coordinator, City of Vancouver--referred to the shift from normal operations to crisis management as "going into overdrive." He noted that responders and crisis managers who have experienced the shift know what is happening. But for those who are inexperienced the transition is a bit of a surprise. He observed in crisis managers a gradual escalation of apparently normal activities performed under normal circumstances until these managers suddenly operate at a different plateau. And in between the two stages there seems to be a void, a vacuum, between what is real and what is not.

Dr. John Butt defined the transition into crisis management using the analogy of a car. He noted that it was "like stepping on the accelerator [and getting] an adrenalin type of an experience." He also observed that

> there is certainly a definite shifting of gears both mentally and physically. With it comes a certain anticipation, which I think is an emotional thing, that times are going to be difficult. There is a certain emotional preparedness which begins very quickly. It is a shift in gears, in energy.

Greg Smith observed that his transition to crisis management was abrupt. In such circumstances as a disaster, he noted that "a different protocol comes into play, and an entirely different set of procedures falls into place because you do things that you would never normally do." He also observed that the authority level of people changes radically due to the disaster and the onset of crisis management. He stated:

> People who are not normally authorized to purchase equipment, or make financial commitments can now make them. Financial commitments can be made over the phone as opposed to formally and with papers. Normal travel procedures change. For example, access to government aircraft, which is normally a very difficult thing to do, in a crisis is generally organized by the head of one or two departments talking to each other. In my case [it was organized] by me talking to one of the

pilots.

Don Campbell observed that the transition to crisis mode "takes place at the point where the organization recognizes the crisis, becomes drawn into it or falls into it. It can be by formal declaration . . . or it can be because of the response role of the organization versus its normal day-to-day activities." Discussing the matter from a federal perspective he stated:

> Our organization is not involved immediately in response. A consequence of that is there is a period where we are watching and waiting and that transition, that period when we look at a situation, [and] identify the situation as having the potential to involve us or other elements of the federal government, is the period when we essentially shed our administrative mode and concentrate on that issue and the potential emergency. That point when we become involved is when we take an active role in passing information.

The shift from crisis management. While most respondents described the transition to crisis management with ease, many had difficulty identifying with clarity the transition from crisis management to day-to-day operational mode. They reported it to be almost anti-climactic and unnoticeable. Respondents noted that when the threat and consequence of the disaster agent ceased to require extraordinary effort, so did the process required to manage the response to it. Dr. John Butt called it "getting a grip on the situation." Whenever it takes place, or is recognized to take place, that is when the organization typically reverts to its normal procedures.

Many of the respondents commented about their feelings of 'coming down' after the disaster. They reported a slow return to normal physiological functioning. Some reported loss of sleep, others reported loss of appetite, fatigue, or intrusive thoughts. Invariably, most of these individuals required a period of contemplation, of reassessment, and the proverbial 'recharging of the their batteries.'

Disaster Impact Period and Management Practices

In Question #1 of the questionnaire, respondents were asked to identify the effects of disaster on their management practices during the initial response period. They were requested to identify their level of agreement with various statements. Responses are reported first as aggregate values and are then analyzed according to the professional background of respondents.

In many cases, the differences of perception between different professional groups cannot be explained by the data alone. It may be explained through grounded knowledge of the different cultures which typify the various professions. Broad generalizations were detected. However, unless specifically stated as 'significant', these should be taken only as 'interesting' and worth pursuing.

Role Consistency

Respondents were asked to state their level of agreement with the following statement: "Typically, during the initial period of disaster response the roles of my Branch, Division or Agency were unchanged from their pre-disaster status." The majority of respondents (63.7%) either agreed or strongly agreed with this statement.

These responses were analyzed according to the professional background of the respondents and the findings tabulated in Table 7.1.

Table 7.1
Initial Role Remained Unchanged
According to Respondent's Profession

Profession (n)	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
Health (7)	28.6	42.9	28.6	
Military (2)	50.0			50.0
EPC/EMO (26)	26.9	46.2	15.4	11.5
Gov't. (30)	20.0	33.3	23.3	23.3
Fire (14)	21.4	50.0	28.6	
Police (15)	13.3	40.0	26.7	20.0
All groups (94)	22.3	40.4	22.3	14.9

Interestingly, the majority of health professionals (71.5%), EPC and EMO staff members (73.1%), and fire personnel (71.4%) agreed or strongly agreed with the statement that the role of their agency remained unchanged during the initial stages of the disaster. By contrast only 53.3% of police respondents and 53.3% of other government employees stated any agreement with the statement.

Size of One's Organization

Slightly over half of respondents (54.9%) either agreed or strongly agreed with the following statement: "typically, during the initial period of the disaster response the size of my organization remained unaffected by the disaster." Table 7.2 identifies the response patterns of respondents by professional groups.

Again some interesting patterns emerge. A small majority of EPC and EMO members (57.7%), fire professionals (57.2%), and police personnel (60.0%) either disagreed or strongly disagreed with the statement. On the other hand, a strong majority (73.3%) of other government employees either agreed or strongly agreed with the statement. This response difference may be explained by the fact that most respondents were from traditional response agencies. In a disaster these agencies typically expand their structure to accommodate the additional resources and roles required to respond to a disaster. As illustrated in Table 5.2 that does not happen in government departments whose primary role is not disaster related.

Table 7.2
Initial Size of One's Organization Remained Unchanged According to Respondent's Profession

Profession (n)	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
Health (7)	14.3	28.6	28.6	28.6
Military (2)	50.0		50.0	
EPC/EMO (26)	15.4	26.9	30.8	26.9
Gov't. (30)	30.0	43.3	16.7	10.0
Fire (14)	28.6	14.3	42.9	14.3
Police (15)	20.0	20.0	33.3	26.7
All groups (94)	23.4	28.7	28.7	19.1

Authority to Decide

Respondents were provided the following statement: "typically, during the initial period of the disaster my authority level to make decisions remained relatively unchanged." A majority of respondents (65.3%) either agreed or strongly agreed with this statement.

Table 7.3 identifies a general pattern of agreement among all professional groups. They all support the statement, but in varying degrees of majority. The largest degree of support is recorded by fire personnel (76.9%) and the smallest majority is that of the health professionals (57.2%).

Table 7.3
Initial Authority to Decide Remained Unchanged According to Respondent's Profession

Profession (n)	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
Health (7)	42.9	14.3	28.6	14.3
Military (2)	50.0			50.0
EPC/EMO (26)	19.2	42.3	15.4	23.1
Gov't. (30)	20.0	46.7	16.7	16.7
Fire (13)	23.1	53.8	15.4	7.7
Police (15)	13.3	46.7	26.7	13.3
All groups (93)	21.5	43.0	18.3	17.2

Degree of Involvement of Others

Respondents were asked to state their level of agreement with the following statement: "Typically, during the initial period of disaster response the degree of involvement of others in my decision making process was unchanged." Slightly over half of respondents (54%) either agreed or disagreed with the statement.

The perceptions of fire department personnel and police members were diametrically opposed over the involvement of others in the decision making process. As indicated in Table 7.4 the majority of fire personnel (69.2%) believed that the involvement of others remained unchanged while the majority of police members (60%) believed that it had changed. This difference may be explained by the traditional practice of fire departments to maintain their team cohesion and to retain their traditional chain of command.

Table 7.4
Initial Degree of Involvement of Others Remained Unchanged According to Respondent's Profession

Profession (n)	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
Health (7)	14.3	42.9	42.9	
Military (2)		100.0		
EPC/EMO (26)	7.7	42.3	30.8	19.2
Gov't. (29)	20.7	27.6	37.9	13.8
Fire (13)	15.4	53.8	15.4	15.4
Police (15)		40.0	26.7	33.3
All groups (92)	12.0	40.2	30.4	17.4

The responses from the military personnel provide an interesting, though not statistically significant (n=2), observation. This was the only question on which they agreed, noting that the involvement of others in the decision making process remained unchange.

Quantity of Available Information

Respondents were provided the following statement: "typically, during the initial period of the disaster the quantity of information available to me was unaltered." The majority of respondents (67%) either disagreed or strongly disagreed with this statement. This is significant because it is the only indication of disagreement with any of the eight statements in question #1 of the questionnaire. Furthermore, it is the highest percentage of either agreement or disagreement with any of these statements.

Table 7.5
Initial Quantity of Available Information Remained Unaltered According to Respondent's Profession

Profession (n)	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
Health (7)	14.3	42.9	28.6	14.3
Military (2)	50.0			50.0
EPC/EMO (25)	4.0	16.0	72.0	8.0
Gov't. (30)	6.7	26.7	43.3	23.3
Fire (14)		21.4	50.0	28.6
Police (14)		21.4	50.0	28.6
All groups (92)	5.4	22.8	51.1	20.7

The majority of four of the professional groups, listed in Table 7.5, reported a change in the quantity of information which was available in the initial part of the disaster. These groups are members of EPC/EMO (80.0%), fire and police (78.6% each), and government departments (66.6%).

Types of Communication

The statement was: "typically, during the initial period of the disaster the types or methods of communication available for my use were unchanged." Only 52.5% of respondents either agreed or strongly agreed with the statement.

Table 7.6
Initial Types of Communication Remained Unchanged According to Respondent's Profession

Profession (n)	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
Health (7)		42.9	28.6	28.6
Military (2)	50.0		50.0	
EPC/EMO (25)	12.0	36.0	28.0	24.0
Gov't. (30)	13.3	46.7	20.0	20.0
Fire (14)	7.1	50.0	14.3	28.6
Police (15)	6.7	33.3	40.0	20.0
All groups (93)	10.8	40.9	25.8	22.6

As reported in Table 7.6, a majority of personnel from other government departments (60.0%) and fire (57.1%) felt that the types of communication in a disaster remained unchanged. On the contrary, a majority of police members (60.0%) believed that the types of communications did change. All other professional groups were nearly equally divided on the matter.

Reliability of Information Sources

"Typically, during the initial period of the disaster the reliability of my sources of information equalled their pre-disaster status." A total of 61.6% of respondents either agreed or strongly agreed with this statement.

Table 7.7
Reliability of Information Sources Remained Unchanged According to Respondent's Profession

Profession (n)	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
Health (7)	14.3	57.1	14.3	14.3
Military (2)	50.0		50.0	
EPC/EMO (25)	8.0	44.0	36.0	12.0
Gov't. (29)	17.2	58.6	13.8	10.3
Fire (14)		42.9	35.7	21.4
Police (14)	7.1	50.0	35.7	7.1
All groups (91)	10.0	49.5	27.5	12.1

The majority of individuals from government departments (75.8%), health organizations (71.4%), and the police (57.1%) believed that the reliability of the information available to them did not change during the disaster. However, a majority of fire personnel (58.1%) disagreed and felt that the reliability of the information did change.

Accuracy of Information

Respondents were equally divided over the following statement: "typically, during the initial period of the disaster the accuracy of my information was unchanged from pre-disaster level." There was nearly an equal split between those who agreed (n=41) and those who disagreed (n=39). A similar difference existed between those who strongly agreed (n=8) and those who strongly disagreed (n=10).

Table 7.8
Initial Accuracy of Information Remained Unchanged According to Respondent's Profession

Profession (n)	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
Health (7)	14.3	57.1	28.6	
Military (2)	50.0		50.0	
EPC/EMO (24)	4.2	25.0	45.8	25.0
Gov't. (30)	10.0	53.3	33.3	3.3
Fire (14)		14.3	71.4	14.3
Police (14)	14.3	50.0	35.7	
All groups (91)	8.8	38.5	42.9	9.9

A large majority of fire (85.7%) and EPC/EMO (70.8%) personnel disagreed with the above statement. However, 71.4% of health professionals, 64.3% of police respondents, and 63.3% of those from other government departments agreed with the statement. They believed that the accuracy of their information remained unchanged.

Other Findings

The responses to the first two statements were analyzed in view of the professional background of respondents. These statements related to role consistency and size of organization upon impact of a disaster. A number of patterns evolved. The majority of health professionals, EPC/EMO personnel, police and fire members, and other government employees believed that their role did not change due to the disaster. All but the majority of the employees of other government departments agreed that the size of their organization did change.

A comparison was made between the responses to the question on respondents' authority to make decisions and the involvement of others in that decision making process. An equal majority (57.2%) of health professional observed that during the initial period of the disaster their authority to make decisions remained unchanged as was the involvement of others. This observation was also made by the majority of fire personnel. However, a majority of police members (60.0%) believed that while their authority remained unchanged, the involvement of others in the decision making process did change. Subsequent interviews revealed a higher instance of involvement by others in operational and strategic decisions.

Four of the eight statements in Question 1 related to communication. When these were analyzed according to the profession of the respondents, a number of patterns emerged. For example, the majority of health professionals held the following beliefs: the quantity of information available to them in a disaster was unchanged (57.2%); the types of communication changed (57.2%); the reliability of the sources of this information did not change (81.4%), and the accuracy of the information did not change (71.4%).

The majority of respondents from EPC/EMO organizations believed that while the available quantity of information was different, the reliability of the information sources remained the same. However, the methods of communications and the accuracy of the information were different from day-to-day operations.

The majority of employees from other government departments observed an increase in the quantity of information available to them during the initial period of the disaster. However, the majority of them noted no difference in the method of communication, reliability of the sources of information, and the accuracy of the information. Their pattern of response may be explained by the fact that these employees were at headquarters or command posts and not at the scene of the disaster.

The majority of respondents of both fire and police organizations reported a change in the quantity of information which was available to them during the initial stage of their disaster. However, each group reported a different pattern of experience. The majority of fire personnel reported no change in the methods used by them to communicate, but changes in the reliability of their sources of information and the accuracy of the information provided.

The majority of police members, on the other hand, reported no change in the reliability of their sources of information and the accuracy of that information, but a difference in the methods used to communicate.

The above noted variations may not be statistically significant. However, they illustrate a number of major points which are supported by the data acquired through the interviews. The key among these points is that disasters have an impact on the way organizations operate and, by necessity, the manner in which managers and individuals respond. The specific details depend on a variety of factors: the responder's professional background, level of responsibility, and disaster function, as well as the nature, structure and culture of the responding organization.

Summary of Chapter 7

This chapter outlined the findings of the study which provide the context for the process of managing a crisis in a community. It was accomplished in two parts. In part 1 an overview of the process was provided, followed by a discussion about the start and end of the crisis management process, and how it is likely to be 'triggered.'

The second part included a review of the findings on the effects of disaster on the crisis manager's organization during the initial period of the disaster. Responses were discussed and the key differences among the professional groups were highlighted and discussed.

CHAPTER 8

Analysis of the Findings Related to the Process of Crisis Management

This chapter contains the findings of the study which help define the components of a management process for a crisis in a community. The three parts of the chapter are based on respondent comments. The first part contains an outline of the effect of disasters on the ability of crisis managers to manage community wide disasters. The second contains a discussion of the key activities of crisis management and the major principles of the process. The third part relates suggestions on the training of managers to become crisis managers.

Respondent comments from both the questionnaires and interviews are referred to in this chapter. A greater emphasis is placed on data from the interviews because they provided a broader view of the actual activities of the crisis management process.

Disaster's Impact on the Ability to Manage

This part describes the effects which disasters have on a crisis manager's ability to manage. The following four separate abilities are discussed: to set priorities, to take independent action, to control resources, and to acquire additional resources.

Ability to Set Priority

Respondents were asked about their ability to set their own and their organization's work priorities during the period of disaster response. Their responses are listed by category of response in Table 8.1 and by the professional group of responder in Table 8.2.

As indicated in Table 8.1, a small majority (56.5%) believed that their ability to set priority actually expanded during the disaster. Only 12.9% of respondents believed that they were less able to set priorities. The rest indicated 'no change.'

Table 8.1
Ability to Set Priority

% Signif. Expanded	% Moder. Expanded	% No change	% Moder. Reduced	% Signif. Reduced
24.8	31.7	30.7	8.9	4.0
----- 56.5 -----		30.7	----- 12.9 ----	

As indicated in Table 8.2, the majority of every group reported either an unchanged or expanded ability to set priorities. The highest ratio (100%) was reported by the military who stated that their ability was 'significantly expanded.' The majority of fire personnel (92.4), health professionals (71.5%), and government employees (63.3%) identified an expansion of their priority setting ability. By comparison, only 40.0% of police members and 45.0% of individuals from EPC/EMO reported a similar ability.

Table 8.2
Ability to Set Priority
According to Respondent's Profession

Profession (n)	% Sign. Expanded	% Moder. Expanded	% No Change	% Moder. Reduced	% Sign. Reduced
Health (7)	28.6	42.9	14.3	14.3	
Military (2)	100.0				
EPC/EMO (25)	12.0	32.0	44.0	8.0	4.0
Gov't. (30)	30.0	33.3	26.7	10.0	
Fire (13)	46.0	46.2	7.7		
Police (15)	6.7	33.3	33.3	20.0	6.7
All groups (92)	25.0	34.8	28.3	9.8	2.2

The differences noted above are puzzling. However, they may be explained by the differences in the roles which these professionals occupy in their regular duties, and by the differences in culture of their respective organizations.

For example, police constables typically have more operational freedom and operate more independently in the field than do fire fighters. The latter are trained and organized in teams and are typically more directed by their respective officers. Consequently, in a disaster police constables may not have as much an increase in their ability to set priority and work independently, as do their fire fighting partners.

Ability to Take Independent Action

A large majority of respondents (89.1%) believed that their ability to take independent action during disasters either remained unchanged from normal operations, or was expanded (Table 8.3). A small majority (57.4%) felt that their ability was expanded while a very small minority (10.9%) believed that their ability was reduced.

Table 8.3
Ability to Take Independent Action

% Sign. Expanded	% Moder. Expanded	% No change	% Moder. Reduced	% Sign. Reduced
25.7	31.7	31.7	8.9	2.0
----- 57.4 -----		31.7	----- 10.9 ----	

When the responses to this question were analyzed according to professional groups a number of significant patterns emerged (Table 8.4). Nearly twice as many fire personnel (76.9%) as police members (40.0%) noted that their ability to take independent action expanded during a disaster.

Table 8.4
Ability to Take Independent Action According to Respondent's Profession

Profession (n)	% Sign. Expanded	% Moder. Expanded	% No Change	% Moder. Reduced	% Sign. Reduced
Health (7)	28.6	42.9	14.3	14.3	
Military (2)		50.0	50.0		
EPC/EMO (25)	12.0	44.0	36.0	8.0	
Gov't. (30)	33.3	30.0	30.0	6.7	
Fire (13)	53.8	23.1	23.1		
Police (15)	20.0	20.0	26.7	26.7	6.7
All groups (92)	27.2	32.6	29.3	9.8	1.1

Nearly equal numbers (23.1% and 26.7% respectively) noted no change in their ability to act independently. Moreover, in each of the professional groups, few if any identified a reduction in their ability to act independently. Those who did indicate a reduction were police members (33.4%), health professionals (14.3%), EPC/EMO (8.0%), and other government employees (6.7%).

On another note, a vast majority (93.3%) of other government employees observed that their ability to take independent action either increased or remained unchanged. Nearly a similar ratio (92.0%) of EPC/EMO employees recorded a similar observation.

Ability to Control Resources

A small majority of respondents (55.9%) reported an increase in the ability to control resources. On the other hand, only 5.9% reported a decrease in that ability. Close to a third of respondents (38.2%) identified no change in that ability (Table 8.5).

Table 8.5
Ability to Control Resources

% Sign. Expanded	% Moder. Expanded	% No change	% Moder. Reduced	% Sign. Reduced
25.5	30.4	38.2	5.9	0
----- 55.9 -----		38.2	----- 5.9 -----	

An analysis of responses by professional groups highlighted a number of general observations. About a third of each of the respective groups reported no change in the group's ability to control resources. Few reported a reduction in that ability; notably among them were police members who reported no reduction, other government department employees (3.3%), and EPC/EMO personnel (7.7%).

As with the previous question, a large majority of other government employees (96.7%) and EPC/EMO personnel (92.3%) noted either an increase or no change in their resource control capability. All police members reported similar experience.

Table 8.6
Ability to Control Resources
According to Respondent's Profession

Profession (n)	% Sign. Expanded	% Moder. Expanded	% No Change	% Moder. Reduced	% Sign. Reduced
Health (7)	14.3	42.9	28.6	14.3	
Military (2)	50.0		50.0		
EPC/EMO (26)	11.5	46.2	34.6	7.7	
Gov't. (30)	30.0	33.3	33.3	3.3	
Fire (13)	38.5	7.7	38.5	15.4	
Police (15)	26.7	33.3	40.0		
All groups (93)	24.7	33.3	35.5	6.5	

Ability to Acquire Resources

When asked about their ability to acquire needed resources, a large majority (75.5%) of respondents believed that this ability expanded during disaster operations. Only 4.9% stated that it declined in any way. Nearly 20% noted that it remained unchanged (Table 8.7).

Table 8.7
Ability to Acquire Resources

% Sign. Expanded	% Moder. Expanded	% No change	% Moder. Reduced	% Sign. Reduced
43.1	32.4	19.6	3.9	1.0
----- 75.5 -----		19.6	----- 4.9 -----	

When analyzed according to respondents' professional groups (Table 8.8) the results indicated a number of interesting patterns. For example, a large majority of each group reported that their ability to acquire necessary resources in a disaster either expanded or remained unchanged. The percentages included 100% of military and police, 96.7% of other government departments, 96.2% of EPC/EMO, 92.3% of fire, and 85.8% of health respondents.

Over three quarters of the respondent from EPC/EMO, other government departments, fire, and police reported an increase in their ability to control resources. However, only 42.9% of health professionals reported an expansion of that ability while a similar percentage reported no change. No one reported a significant reduction in that ability.

Table 8.8
Ability to Acquire Resources
According to Respondent's Profession

Profession (n)	% Sign. Expanded	% Moder. Expanded	% No Change	% Moder. Reduced	% Sign. Reduced
Health (7)		42.9	42.9	14.3	
Military (2)	50.0		50.0		
EPC/EMO (26)	57.5	19.2	19.2	3.8	
Gov't. (30)	36.7	46.7	13.3	3.3	
Fire (13)	53.8	23.1	15.4	7.7	
Police (15)	60.0	33.3	6.7		
All groups (93)	46.2	32.3	17.2	4.3	

Activities of Crisis Management

This part of the chapter outlines the components of a crisis management process. The process is described through a number of steps. The general characteristics of the process are discussed first, followed by a discussion of the unique features of crisis management which distinguish it from the management of day-to-day operations. The more specific features such as communications, decision making, and coordination are then addressed individually.

The General Characteristics of Crisis Management

When asked "what is crisis management?" Jim Hoffman--EPC's Regional Director, Alberta/NWT--made the following observation:

> Crisis management means straightening out the curves in the road. If we take the administration of everyday activities, that to me is a four lane divided highway. A crisis turns that into a muddy, bumpy, curvy trail that you have to manipulate as best as you can. You sometime have to straighten out the road. You have to manipulate it, drive on it and straighten out the road all at the same time. In a disaster, the road fails completely and has to be replaced.

RCMP Corporal Dan Rennick referred to the process of managing a crisis as being akin to fast-tracking a major project in business or industry. Certain activities must take place in particular order, but ultimately there are numerous activities which take place simultaneously, with many groups working in parallel tracks to ensure that their 'project' is completed, and their goals achieved, as quickly as possible. He concluded that the key role of a crisis manager is to coordinate these diverse activities.

All respondents addressed the process of managing a crisis at a community. Invariably, their description of the process was intermingled with a listing of the activities and skills required of a crisis manager. These included: leader, communicator, coordinator, organizer, problem solver, decision maker, risk taker, adaptable, resourceful, consultative, consensus builder, and knowledgeable on a range of topics from technical to the machinery of government. According to many respondents, crisis managers should be willing to take charge and use their initiative, be able to cope with stress, be able and willing to empower others, have a sense of humour, know their strengths and limitations, and be self confident, honest, and sincere.

Commenting on the many requirements faced by crisis managers, John Tanchak, District Officer with APSS, observed that

> crisis managers have to be damn near God. They have to be able to think quickly, react intuitively, and those intuitive decisions have to be correct. They have to be insulated from comments that others . . . might make about their decisions. They have to be able to change those decisions and make new ones [more] effective. It becomes damn near an impossible task, but as has been proven time and again, in an emergency situation people do rise to that task.

Differences Between Crisis Management and Daily Operations

Question #3 of the questionnaire asked: "In your view, are the management activities performed by crisis managers different from those performed by day-to-day managers? If 'yes' what are these differences?" The question was answered by 90 of 103 respondents.

Most of the respondents observed that there are many similarities between the activities of daily management operations and those of crisis management. However, only seven (7.8%) reported that there are "no differences" between the activities of the two management roles. The remaining respondents were divided between those who responded with a resounding "yes" (72%) and those who reported no difference (20.0%) but identified some 'peculiarities' to crisis management.

Those who identified a difference concentrated on the type of activities which crisis managers would have to perform. These activities include communication, decision making, coordination, problem solving, and the deployment of resources. Although they are each discussed in greater depth below the following comments help put crisis management into perspective. "Day to day managers make decisions to provide better service, etc. Crisis managers are under considerably more stress and are making decisions which could save lives ... [without] a second chance." Moreover, the "speed and depth of decision making in a disorderly environment push the envelope of any management system" to the limit.

One in five respondents observed no difference between the two management roles, except for the unique environmental conditions of disaster situations and their impact on management duties. In essence, these respondents believed that the activities which managers performed in daily operations and in disasters were identical. Managers had to communicate, coordinate, make decisions, plan, and so on. However, disasters imposed their own unique context on normal management duties.

The greatest impact which disasters had on management duties was reported to be significantly more stress. Respondents who reported that crisis management required no additional and unique management skills, also made the following comments.

The two management processes "are different, but mainly by degree. The same principles are applied but do not have to be analyzed under such pressure (stress)." Crisis management is "more intense, requiring more action, speed, [and] urgency." "From a police perspective [there is no difference]. The police are constantly dealing with crisis situations. The only change is the magnitude of the crisis." "All managers must make decisions and all managers work under stress. But, in emergencies, these two areas are intensified and I am not sure the stress factor is always appropriately recognized."

One respondent, in particular, commented on a change in the way that managers are expected to perform. He observed that traditionally there have been differences between crisis managers and other managers. However, he observed that today "all managers are expected to perform crisis management as a concomitant of managing in a changing and fluid environment. The traditional roles of the emergency manager can be seen as a paradigm of the skills which are now expected of all management."

Stress. One of the most frequently mentioned factors which is unique to crisis management is the incredible level of stress under which individuals--responders and crisis managers alike--must perform. This stress may be caused by any of the following: time shortages; consequences of error; increased visibility among peers, public and the media; the lack of 'procedures'; a break from 'normalcy'; the increased involvement of others in the management process; isolation (physical, emotional, and cognitive); increased vulnerability; and the lack of clear and accurate information. These items, either in isolation or in combination, can send a manager's stress load to hitherto unknown levels.

Mark Egener, Managing Director of APSS, provided the following illustration from the July 31, 1987, Edmonton Tornado.

> Stress levels in a crisis escalate to high levels very, very quickly. Lots of people have difficulty operating smoothly in a very high stress environment. There is nothing that adequately prepares you for the stress level in an upper-end crisis. Even in exercises where we try hard to simulate some of these things--the confusion, the number of decisions that need to be made very quickly--until people actually work under that pressure and find that they can operate in that environment [they will not know whether they can do it].

Wayne Marr, Executive Director of Saskatchewan EMO, observed that in a crisis situation a person is "faced with a situation where time is of an essence and there is always that fear of overlooking something that might have been a critical factor." He remarked that the pressure on crisis managers may be also caused by lack of needed information, peer pressure to do one's best, and the fear of failure. Crisis management requires a great deal of initiative and "people are reluctant to go out on a limb." Moreover, "the skills that are required for crisis management have to be known. There is no room for on-the-job training or gradual learning skills."

Inspector Jim Cessford, Edmonton's Director of Disaster Services, noted that "the number one characteristic [of crisis managers] is the ability to handle stress, to perform under very stressful and adverse conditions." He also noted that "while a lot of managers can make the crisis decisions, they do not have the ability to handle the adverse conditions, the excitement, [and] the consequences of the decisions."

Steve Beatty, Emergency Planner with the Municipality of Halton, observed that a disaster situation has a faster pace, different priorities, and a larger response organization than one is typically accustomed to. Each of these is a stressor which can create havoc with the process and the individuals trying to manage it.

Stress is a two-edged weapon for the crisis manager. A number of respondents reported being 'energized' by the event, the crisis management process, and the disaster environment. Jim Hoffman, EPC's Regional Director, Alberta/NWT, stated that

> the adrenaline pump is there . . . and [during disasters] I have felt to be far more alive, sensitive, aware, almost [with an] animal instinct about what was going on around and about me. I found that mentally my senses were much sharper, being attuned to things that were going on that may have a bearing, directly or indirectly, on what was happening.

Dr. John Butt, Alberta's Chief Medical Examiner, reported the same kind of experience and added that "by and large one responds particularly well because of the adrenalin and other things. You only have to go through one of these things to realize at the end that you are on this [emotional] plateau and that you cannot unwind readily."

However, the same aspects which keeps crisis managers 'up' or on an 'emotional high' also present a grave risk to them and their people should these managers not know their personal limits. According to Dr. John Butt "efficiency becomes inversely proportional to the amount of time that [a person] is involved [in managing the crisis]. . . . there is a definite instance when you become 'battle fatigued' emotionally, exhausted, physically exhausted . . . [and] do become vulnerable."

Jim Hoffman observed that as a crisis manager

> in effect you are driven to carry on working, and carry an extraordinary burden for a long period of time in which two things happen. After a long period of time your edge starts to dull, and secondly, if you carry on for that long period of time and then the situation stabilizes, the mental and physical let down seem very severe.

Dr. Butt noted his own reaction to stress. "When I do settle down [after a disaster] my appetite is poor, and I am not able to sit still for any length of time until the rate of heart is decreased, and at that time it is usually the period when I am in bed or otherwise in a quiet place reflecting on the issues." While, the specifics of the response to de-stressing may be unique to Dr. Butt, the pattern of de-pressurizing was confirmed by a number of other interviewees.

John Tanchak suggested that crisis managers have to gauge their stress levels to ensure that their capacity to cope with stress is not exceeded. On the one hand John stated that crisis managers "have to be able to go without sleep for about 36 hours, and [if necessary] not eat." On the other, these managers must also be able to release control of the situation to someone else, and "get a break."

The stress element in a crisis is not restricted to those who are at the sharp end, at the scene of the disaster. Mark Egener reported a high level of frustration in the management of a crisis from behind the scenes, as is the case at a municipal council or government. There is

> a frustration and an inability to call out the systems that you need to deal with the situation. So there is a certain amount of patience that is required and a clear understanding of what the role of the municipal government or of the provincial government is going to be, and at what time you are going to have an influence on the situation. It is an extremely difficult thing to do.

Naturally, crisis managers need to be prepared for their task. Ron Wolsey, APSS's Executive Director of Disaster Services, observed that because crisis managers operate in a pressure environment they need to be trained for it. His point of view was supported by many of the respondents. However, Chief Dave Hodgins, from the Strathcona County Fire Department, observed that not all managers can effectively handle disaster-related stress. He suggested, therefore, that managers gauge whether they can handle stress well, and if not find a substitute to whom they would delegate the mechanics of crisis management.

A number of the respondents also highlighted the need for and use of humour in disaster situations to relieve the stress. Don Campbell, EPC's Assistant Regional Director, Alberta/NWT, used the term 'gallows humour' and reflected how important it is that disaster responders be able to employ it to vent some of the stresses of their job. Many of the other respondents suggested rest, physical exercises, and breaks as necessary.

Shift of role. Regardless of the planning which managers may have undertaken, and despite the training which they may have received, they may likely be surprised by the realities of a disaster. The roles which these managers must adapt to fit the scenario, the new roles which they must accept, and the new scenarios or environments in which these roles must be performed all create a stressful burden for these managers.

Dr. John Butt warned that "you can not plan for every eventuality. And something, in one of these situations, is going to come out from behind a rock and it is going to have a big question mark that will have to be answered very quickly." Don Campbell stated the issue from another perspective. He noted that "when you start to do things in an emergency that you do not do as a matter of course, for which you have not practised in your organization, you start to get into really murky water and your chances are very good that you will not be effective."

Mark Bennett, Winnipeg's Emergency Coordinator, advised managers to keep an open mind and be flexible. He said "you have to be flexible and recognize that every situation is going to be different and just because something works today, in today's crisis, it may not work as well tomorrow in tomorrow's crisis." Flexibility was stated as a requirement by most of the respondents, and was applied to their use of resources and their decision making processes in crises.

Focus. Disaster environments tend to focus everyone's attention on what is considered important--the saving of lives. The focusing of perspectives begins at the organizational level. Don Campbell observed that "the daily management of an organization or of a service is different from crisis management primarily in terms of scope." He added that

> crisis management operations are very focused. They are focused on the need to mitigate the effects of the disaster, to bring to bear the resources that are required to deal with it, and then establish the stage for recovery.

Jim Hoffman observed that generally speaking in a disaster "there is a greater urgency. The imperatives are very evident [and] there is no need to convince other people of the perspectives [of the situation] because they are real and they are 'alive'." In other words, there is no doubt as to the immediate requirements of the situation and this general realization helps focus individuals and organizations.

Even communication lines become focused. Greg Smith, Mines Specialist with Alberta Occupational Health & Safety, observed that because normal communication lines fail in a disaster and because time is of the essence, crisis managers need to take short cuts. He noted that in a disaster, crisis managers "want to short-circuit as much of the lines of communication . . . [to] have a very tight-knit team that are focused on that one problem because . . . the normal day-to-day operations of the community are still going on" and may provide a distraction.

Disaster response also demands that individuals (i.e., crisis managers) become 'focused.' Dan Rennick stated that during "crisis management getting the job done is the one critical function of the crisis manager." Don Campbell stated a similar view and added that as a crisis manager "you tend to become more attuned to what is essential during the operation and you tend to abandon those parts which are not critical." Mark Bennett cautioned that crisis managers "must exercise caution that [they] do not get distracted or go off on some sort of a tangent . . . and start dealing with something else which is perhaps of lower priority." According to Don Campbell "a crisis manager has to be [a] somewhat autocratic individual who is capable of taking charge, and uses the techniques and resources which contribute to that and that only, so [that] he can focus on essential issues and ignore peripheral issues."

However, as Sam Baird--Chief, Crisis Management Division at Environment Canada--noted, many senior managers are unable to demonstrate what he called "single-item focus." He observed that

> executive level managers tend to have reached their place in the organization because they are very good at big-picture thinking, very good at understanding complex multi-jurisdictional and multi-area issues,

> integrating them into a general group and forward of the organization. Therefore, . . . executives, managers, deputy ministers, get to the level in their organization because they are very good at synthesizing many issues. Thinking of many things at the one time, focusing the organization and moving it forward on many fronts.

He concluded that to be effective crisis managers these executives should do the opposite of their day-to-day routines. They need to become focused on single issues and follow each issue to its logical completion.

Communicating in a Crisis

All interviewees and most questionnaire respondents acknowledged the importance of having accurate and timely information in a disaster. Jim Hoffman noted that "crisis management in Ottawa is primarily information management." He, Don Campbell, and Sam Baird emphasized that, from a federal government perspective, their role was somewhat distant from the community and its immediate response requirements, and more focused on the flow of information and resources.

Effective communication in a disaster was identified as important regardless of the crisis manager's operational level. Don Campbell stated that he views "the passage of information in a crisis as disseminating information to a pool of individual networks. In other words, [using] a certain hub system to pass information rather than a hierarchy." He added that he made "use of existing networks, informal and formal, to pass information rather than the more structured approach."

Communication in disaster environments was observed to be different from communication in day-to-day operations. Sam Baird remarked that crisis communication is typically informal and is conducted verbally. By comparison, daily operations are often more formal and involve much more letter writing and other documentation. Dan Rennick stated that communication in a disaster

> is different simply because you have people who are talking and passing out instructions and they are already thinking ahead [to what needs to be done next]. They are talking to people who are receiving instructions but are thinking about what has just happened. [Consequently] you do not have people devoting their whole attention to the particulars of the conversation.

Respondents reported encountering numerous obstacles to effective communication in disasters. These obstacles related to them as individuals, their organizations and systems, and the disaster environment as a whole. For example, respondents reported a surprising and definite surge in the number of 'players' who suddenly joined the communication network. The number of messages directed to these crisis managers and disaster responders literally clogged the communication system. Communication inputs reflected varying perspectives, preferences, objectives and skills. Communications were always performed under stress due to time shortages, fear of failure, lack of skill, lack of valid data about the situation, or demands from superiors the media and the public.

Respondents observed many complications in the flow of information. These included significant variances in culture , terminology, and procedures among responding organizations; lack of compatibility of equipment; and the physical and emotional state of those involved in disaster response.

Wayne Marr observed that "the amount of information that is required once an incident takes place usually overwhelms the staff . . . on hand and subsequently they find themselves in a position of trying to decide exactly which decisions have to be made and which can be ignored." He noted that the situation is further complicated by the shortage of time. "There is no time to say [things] a second time, and [things] have to be understood the first time." Consequently the "communication style actually changes from a warm comfortable mode to deliberate information giving." Jim Cessford observed the following: "You have to tell your people what is going on. You have to hear from them what is going on. . . . The most important thing though, is that you have to be clear and concise in your instructions . . . [and] to ask for understanding."

Jim Hoffman added another component to the above and stated that in a crisis situation "you do not have a lot of time to convince someone about your perspective" of the disaster--what needs to be done, by whom, and when.

Don Campbell observed that from an organizational behavior perspective "what changes, perhaps, are the lines of communication. [This occurs] because in a normal organization formal lines of communication parallel the formal structure, whereas in a crisis situation, the informal linkages between responsibility centres are probably the most widely used methods of getting information out."

Most respondents observed that effective disaster communication requires the crisis manager to perform in a unique fashion. It was unanimously agreed that crisis managers must be effective communicators. Wayne Marr observed that a crisis manager must "listen, observe, and deliver information." He and many others also noted that by effective communication they meant both verbal and nonverbal communications.

Greg Smith remarked that crisis managers can not expect the necessary information to automatically reach them, nor can they be guaranteed that it can be processed with ease. He suggested that crisis managers plan ahead for such eventualities. That will require sorting through incoming messages and calls, and will likely demand extra people who will handle the flow of information.

Dr. John Butt observed that "the issue of communication is [so] vitally important that] . . . the manager has got to go down to the 'shop floor' and speak individually with the people" who are responding to the crisis. Most respondents agreed with the essence of his message, namely that crisis managers cannot and should not be insulated from the key people who are working with and for them.

Crisis managers must have 'the big picture' which, in the fluid environment of a disaster, demands on-going communication. Corporal Dan Rennick noted that crisis managers have "to be apprised of the big picture. . . . [They do not] need all the particular facts, but . . . need them available in the event that something does become an issue."

One aspect of communication--working with the media--was addressed by a handful of respondents. It was considered significant by them because the media is ever present in disaster situations and demands information. The key message which came from six separate interviewees was that crisis managers have enough on their plates without the media. Crisis managers should, therefore, have a media liaison person on their staff (or 'team') who will work with the media. Media liaison personnel should be trained to work with the media, and would be a tremendous asset for crisis managers by taking some of the 'heat' off them.

Sam Baird observed that in a crisis, the communication aspect and the media aspect are identical. He advised crisis managers to "have a very good understanding of the designated spokesperson principles, and how the media works."

Decision Making in a Crisis

Most interviewees agreed that crisis management is primarily decision making in a crisis environment. Furthermore, nearly all respondents observed that crisis managers must be able to make effective decisions and must do so in the absence of complete information and time lines. The process by which these decisions are often made was stated to be generally similar to the processes used during routine operations. However, a few modifications were reportedly used to accommodate the unique disaster environment in which decisions had to be made.

Mark Egener contributed the following perspective of decision making in a crisis. He noted that

> It is always a surprise to see the number of decisions that have to be made. This is part of the stress of the situation. There is an incredible number of decisions that have to be made in a crisis situation, with usually less than adequate information. So, people have to some extent, be prepared to innovate and fly by the seat of their pants and make decisions based on their experience, without having all the information that they would like to have.

Steve Beatty provided another dimension to decision making in a crisis. He remarked that in daily operations managers make their decisions based on procedures and certain processes. However, in a crisis these managers are provided a true sense of managerial decision making. They are given clear authority and an opportunity to employ it to the fullest.

Don Campbell observed that when managers make decisions in the context of daily operations these decisions can be constructed so as to be tested. Managers have the luxury of being able to second guess themselves. That luxury of flexibility is not available in a crisis. Furthermore, as many respondents noted, the consequences of decisions in a crisis are far weightier than in normal operations with literally life and death depending on one's decision. This added dimension created a high degree of stress for all who experienced crisis response.

Sam Baird noted that crisis management is almost identical to strategic management except for the tighter time lines which exist in the former. He observed that in a crisis "you do not have the time to think. You work on what is called the 80/50 principal. Meaning that when we get 50% of the data, if we make a decision based on 50% of the data, we have an 80% chance of being correct."

A number of respondents observed that crisis managers must make decisions, and equally important, must be seen to make decisions. They must be seen as decisive leaders regardless of the lack of information. Nearly all respondents observed that crisis managers can not afford to wait till they have all the necessary information in order to make the 'correct decision.' Instead, these managers must assess the situation, make a decision, and communicate that decision clearly, decisively, and quickly to those who must act on it.

While the important thing is to avoid procrastination and make necessary decisions, crisis managers must be prepared to adjust their decisions, and with them their course of action, as more information becomes available and as new alternatives become available or necessary.

Nearly all respondents remarked that crisis decision makers must be wary not to make decisions on issues or topics for which they are neither qualified nor well informed. Orest Oginski observed this issue with regards to police work, Dave Hodgins with regards to fire fighting, Greg Smith on mine safety and rescue, and John Oakley on rescue and medical aid. They all agreed that the role of crisis managers is not to tell specialized responders how to do their technical work. Rather, the role of crisis managers is to coordinate the efforts of the various agencies, professions, and groups to ensure effective overall response both at the scene of the disaster and at higher headquarters. As Dave Hodgins observed, "the crisis manager is not making decisions in terms of the tactics that are happening on scene. The crisis manager is dealing with the strategies of the overall incident."

Greg Smith observed that in routine operations "quite often we are interested in how people are going to do things . . . [but] in a crisis, in my experience, I do not really care how they are going to do it, just that they are going to do it. That there is a commitment to do it."

A crisis manager should be, in John Tanchak's words, "a person that can make firm decisions and be authoritative enough to carry them out, whether or not they are popular." Many agreed with John's sentiments, though some disputed the degree of authoritativeness which the crisis manager should exhibit. This issue will be further explored below under the heading of "leadership."

All respondents agreed that crisis managers must be able to make decisions quickly and with limited information. Many also remarked that these decisions must be made well despite probable fatigue, lack of clear thought, and many distractions. As Ron Wolsey observed, one such distraction could be that a crisis manager "may be confronted with the gore of the incident, and if [he or she is] someone not experienced in seeing dead bodies may become so rattled by the experience that [he or she] may not be able to cope with the environment and the functions [which need performing]."

Don Campbell remarked that the pressure on crisis managers by the disaster "creates a greater degree of authoritarian behavior. As people retreat into themselves they tend to become more rigid." Many respondents made similar comments about being more focused and more direct in their communication, decision making, and behavior.

Effective crisis managers made effective decisions in a crisis based on their knowledge, experience, and gut feeling or intuition. The majority of interviewees emphasized the importance of experience gained prior to the disaster in the making of an effective crisis manager.

Coordination of Crisis Operations

All respondents made reference to the fact that disasters always require a multi-organizational response. Moreover, they noted that to be effective, this response must be coordinated so that the efforts of individuals and organizations are focused toward the current key objective of the overall organization. They defined coordination as the activity involving not only resources--human and material--but also information, and activities.

John Tanchak observed that during disaster situations people "are willing to put out 120% effort [and] to do whatever they can to alleviate the pain, suffering, loss of property . . . [and] they draw upon hidden resources." However, as he noted, the difficulty is that "a lot of people want to respond to the situation but perhaps do not have the knowledge of how to respond and tend to go off in their separate directions trying to assist. [They] may in fact hamper the efforts of others if they are not coordinated. [That] is one of the key responsibilities of the [crisis] manager." Corporal Dan Rennick stated it more succinctly: "The crisis manager has to be the person who can orchestrate the movements of everybody so that they are coordinated and effective."

Effective coordination also hinges on effective cooperation, and both depend on a manager who, according to Mark Bennett, has "the ability to consult and form consensus." Mark also observed that given the complex nature of disaster response,

> it is highly unlikely that a given individual, irrespective of [his or her] training, education, or whatever, is going to have the universal capability of single-handedly dealing with the situation. So, as quickly as possible, [crisis managers] need to collect around them a group, a management group, an emergency operations control group."

From an organizational perspective, coordination is not an easy task to establish particularly in the midst of a disaster. Various obstacles to coordination were identified. For example, John Oakley--Vancouver's Director of Emergency Management--observed that "the trouble is [that] most of the people in a crisis do not work on a day to day basis together, and [when] put together they are not used to working together." He and many of the other interviewees suggested the need for the establishment and maintenance of 'networks' of emergency planners, responders, and managers. Corporal Dan Rennick observed that "networking is critical and networking as a part of pre-planning is going to develop the confidence between all agencies involved" in the disaster operation. (These 'networks' will be addressed separately below).

Wayne Marr commented on territorial protection. He observed that "some people feel that they are quite capable of handling a crisis situation within their own realm, and [they] object to someone else coming in and taking over as the crisis manager." Andre Dimitrijevic, Coordinator of Manitoba EMO, observed that the same applies to 'jurisdictional turf.' He remarked that disasters typically result in a loss of organizational control over the situation. Moreover, using one's jurisdictional clout in a disaster is often less effective than working cooperatively with the rest of the team.

Dr. John Butt highlighted the difficulty of coordinating the efforts of various jurisdictions. He noted that disaster operations become more complicated when one is "working with people from three or four jurisdictions who, for one reason or another, rightly or wrongly, say [they] are as much or more involved than your operation." He observed that as a crisis manager one must determine "how to work successfully with those people without losing their support which is . . . a big issue."

Nearly all interviewees observed the need to have one person in overall 'charge' of the response effort. As Corporal Renneck observed,

> you have to have one person in overall control simply because things have to be coordinated through one person. But I see a team concept developing. I see the emergency responders, the care giving agencies that first arrive at the scene, knowing that everyone has a responsibility and an agenda. I see them working

> together so that everyone meets his or her needs. By the same token, with the development of site managers and the development of emergency operation centres . . . I see people working as a team and [being] able to get along and interact, [with] everyone's agenda [being] met.

Delegation

As noted above, many respondents observed that because a crisis overwhelms organizations and infrastructures a response to it requires the concerted efforts of more than one organization, and certainly of numerous individuals. These respondents also noted that the task of managing a disaster environment is so demanding that it requires the creation of a crisis team. Moreover, crisis managers must delegate or share many of their traditional management activities with those on their crisis team, or quickly burn out. As Greg Smith warned: "you have to delegate. You absolutely have to delegate. [If you] try and make all the decisions on everything yourself you are going to flop."

Mark Bennett had this advice for crisis managers: "know what you can and cannot do. You cannot be all things to all people. In those times when [you] fail it is because [you] are trying to do too much and have not properly delegated responsibility and authority in areas in which [you] do not possess the right expertise."

Corporal Rennick stated a cardinal and often-repeated rule: crisis managers have "to be able to rely ... on the people that are going to be doing the work." Inspector

Orest Oginski--Edmonton Police Services--stated that crisis managers also "have to invest some authority in various other people in order to have [their] objective attained."

Sam Baird remarked that the process of delegation begins immediately upon the initiation of a crisis management process. He stated that "it is all delegation from the instance that the switch goes, because there are too many players involved. [In fact] everyone is involved ... [and] the delegation starts immediately."

Inspector Jim Cessford noted: "I begin delegating almost immediately on arrival at a [disaster] site. I will start getting people around me who will be responsible to the tasks that I delegate. And they, in turn, will redelegate these tasks." He also observed that one of the greatest failures of crisis managers is that they "feel that [they] are 'the boss' or the 'crisis manager' . . . and have to do everything. That is a critical mistake." Many of the other respondents stated similar sentiments about the sharing of authority, and the delegation of responsibility downwards, laterally, and even across their organization's boundaries.

One of the key obstacles to delegation is the potential lack of knowledge about the competencies of the person to whom a task is delegated. As John Oakley observed "in everyday management you delegate to people that you trust ... [but] in a crisis situation [the crisis manager] has people he does not work with on an everyday basis." John observed that because of this lack of previous contact, crisis managers often hesitate to delegate.

Another major obstacle to delegation was reported to be the differences in cultures, procedures and terminology among the various organizations which respond to a disaster. As Ron Wolsey observed, these factors can create havoc with effective communication and the delegation of tasks. Meanings get garbled and tasking get confused.

One of the major consequences of delegation in a crisis environment, is that many individuals suddenly have responsibilities for which they may not be trained, and with which they may not be comfortable. Many interviewees observed that crisis managers must be cognisant of the risks of delegating in a disaster environment. These managers must encourage a feedback system to verify that the tasks which they delegated and had expected to be achieved, were in fact completed as expected. The often-used term to describe this process of feedback is 'closing the loop'.

Many observed that unlike the situation in daily operations, in a disaster environment there is little time to make corrections. The consequences of error are much higher in a disaster. Ron Wolsey suggested, therefore, that when given, directions should be detailed. All respondents observed the need for clarity of information.

Leadership

It was unanimously agreed by interviewees that crisis managers must also be leaders. Mark Egener reflected the sentiment of the majority when he stated that

> one of the things that you would look for in a manager in a crisis, is perhaps stronger leadership than he would have to exhibit in his normal everyday work . . . the ability to communicate effectively what should be done, to demonstrate to people that it can be done, the calm and smooth operation of a very confused organization. So, leadership comes out as a very important skill.

Dr. John Butt observed that crisis managers have to be, and are expected to be, strong leaders. He stated that a crisis manager's "leadership style is very important to getting people to work, and to getting them a measure of confidence in a situation which is perhaps very difficult for them." He suggested that their whole demeanour--physical bearing as well as emotional and mental posture--must convey a sense of strength and confidence.

Many respondents observed that leaders must be in control of themselves. Chief Dave Hodgins had this advice for crisis managers: "You have to recognize that how you behave will affect the group." He suggested that crisis managers maintain their composure through crisis periods. Mark Bennett expressed similar views and stated that it is "important that a crisis manager . . . appear very calm, collected, [and] rational." He also observed that in a crisis many "people will [likely] be looking to that individual for guidance and leadership."

Crisis managers must also possess 'people skills' and the ability to motivate and coach. Inspector Orest Oginski remarked that

> it is easy enough to say that you will manage the situation. But, managing the situation also means managing a whole bunch of people, and people from different organizational areas as well as different organizations themselves. So, it is good to know people to quickly evaluate [them] and know who you want to put out there to perform certain functions.

Leadership also demands that crisis managers have a sense of purpose and direction. This is particularly important during crises when emotions are high, information limited, normal infrastructures damaged or destroyed, and procedures ineffective. It was generally agreed that the absence of leadership at such a time could be devastating. However, as Don Campbell remarked, "fortunately, it seems to be a characteristic of human nature that there is always somebody who [will take charge]." He noted that this emergent leader may not always be the most senior person in the organization.

Respondents agreed in principle on all issues relating to leadership except one. They agreed that strong leaders are necessary; that these leaders need to be, and also need to be seen to be, in control of themselves and the disaster 'situation'; that leaders need both technical and people skills; and, that these skills require development through training and exercises.

Among all issues identified in this study, the question "which leadership style should be followed by crisis managers?" generated the most diverse range of responses. Some respondents observed that crisis managers are and should become autocratic. As Dr. John Butt remarked, that "a crisis is a time when [an autocratic style] comes to its own. It is really a shift from the [term] leadership to command." He related to the 'command' in the military context. Moreover, he recommended an almost benevolent authoritarian, and observed that "probably under those circumstances people are more prepared to accept this [style]. In my experience they are. But, I do not think that, at the same time, the leader should be neglectful or inconsiderate of the people working under him." Chief Hodgins expressed a similar view and noted that a crisis manager must not only be autocratic but have a presence about him of always being in charge.

Respondents also addressed the aspect of communicating one's orders or directives. Corporal Rennick remarked that "the fellow who is in overall authority [of] the team is not going to say 'please' and 'thank you.' He is probably going to be pretty demanding." However, Dr. John Butt stated an opposing point of view. He observed that regardless of how demanding crisis managers are, they must never forget that they are dealing with fellow human beings.

Other respondents stated that these managers can not manage effectively by being autocratic. They noted that the role of crisis managers was to lead the response team's efforts by using 'people skills.' Steve Beatty expressed this sentiment as follows: "you cannot give a command and expect people to follow that blindly. You have to give people, depending on the request or the order, certain kind of information that they can better deal with [their task]. So [you need] 'people skills' and that includes communications, listening, organizational skills, learning to priorize" and so on.

Another argument against autocratic style of leadership was provided by Mark Bennett. He observed that "large scale crises are so complex that I do not believe it is possible for one autocratic manager to have total grasp of the situation and all its components." Mark remarked that crisis managers have "to surround themselves with experts and . . . recognize their expertise." He also observed that the working relationship in a crisis environment

> is more [like] a matrix situation where duties and responsibilities are assigned to those best prepared to fill them and there is no clear distinction of superiority. The [crisis] manager, however, is the ultimate authority and has to establish that authority. But, I think that if he does that properly there [should not] be a requirement to exercise any further management veto or whatever to over-ride a decision that may [have been] made by individual members of the team.

The views of the majority of interviewees were somewhere between the two above-noted ideological positions. Most interviewees stated that crisis managers need to establish their 'authority', and demonstrate 'strong' leadership tempered by the respect for people's needs, roles, and expertise. As Tim Prawdzik--Municipal Advisor with Manitoba Environment--observed, the crisis manager must be "a team player" who is also coaching, cheering, and leading the team.

Trust. Most respondents observed that a significant part of effective leadership in emergency preparedness and disaster response operations, involved the element of trust. One had to gain the trust and confidence of fellow responders and 'disaster network' colleagues before one could be allowed a partnership role in disaster operations.

The issue of trust was considered significant in many other respects as well. Trust was reported to be a critical factor in being included in the 'team', or in having others readily provide necessary resources for disaster response.

The responsibility to develop and maintain trust was placed squarely on the shoulders of crisis managers. Corporal Dan Rennick observed that a crisis manager "has to be the kind of fellow who has gained a wide acceptance and confidence of the people with whom he would be working because he will, in effect, be directing their activities." The building of trust begins with professional competance.

Sam Baird was adamant that the whole network of emergency managers is founded on implicit trust in each other. He noted that there are few formal agreements or understandings among crisis managers and disaster responders. However, as many respondents noted, when one crisis manager in the network requires the assistance of another, that assistance is almost assured to be available.

Networks. Nine of the interviewees made direct reference to the presence of 'networks' of disaster responders and crisis managers. They all agreed on the importance of these networks. They noted that these networks take time to develop and mature. Consequently, crisis managers who in a disaster, are parachuted into a network unfamiliar to them, are not likely to succeed.

Managers, including crisis managers, are members of many networks. Each network serves its members in different ways. However, as Jim Hoffman observed

> the difference in a crisis, is that the network is more intense and there is more people in it concurrently. The day-to-day networks are usually bilateral or may be multi-lateral in small groups. But in a crisis they are multi-lateral, and complex. More people and organizations are involved and the information flow and the interrelationships are far more intense . . . [because they] require more complex structuring of the information flow . . . [and] a greater sensitivity to their needs and to their capacity to influence response.

Some respondents spoke about building networks. They talked about the need to know the people with whom they, as crisis managers, would respond to a disaster. They also observed that crisis managers need to understand the strengths and limitations of their potential crisis-team partners.

Other respondents commented about accessing these networks during disasters. Greg Smith, for example, made the following observation. "In a crisis, I just want to access a network. I do not care who I access in that network. I just want to make contact with that network. . . . That contact becomes my conduit. The first person that I contact in that organization becomes that [a conduit]. I funnel everything through him [and] that person becomes my voice in that network."

Greg advised crisis managers to work on establishing their own network of contacts. He noted that "the reality [of disaster] is that you want to meet as many people as possible before hand. In an emergency it is amazing how important it is to picture who it is that you are talking to on the phone." He also observed that during a disaster, all one has to do is call a contact person and state one's need. If an explanation is required, and many reported that often it is not, than it is needed to be relayed only once through a 'contact' person to a the rest of an organization or a network.

Many interviewees observed that in a disaster there is little time for 'explanations' or for 'rationalization' of a given request. "The good sources in a network are those who respond to your basic request as quickly as possible" said Greg Smith, adding that sometimes the requests have to be as blunt as "I need this or that."

Another element of networking relates to the occurrence of disasters in after-hour periods. Greg Smith noted that

> normally you can pick-up the Yellow Pages and find anything that you want. But in a crisis that happens after 9 o'clock at night on Friday, there is nobody at home [and no stores are open]. Even though there are all those resources there, [through] the Yellow Pages, how do you access them? Now you are looking at "who do we know that works for this company?" . . . That is sort of a network.

Jim Hoffman described his approach to building networks. He stated:

> I probably operate on a day-to-day basis with greater recognition that the practices, the protocols, networks and credibility that I establish and work on in day-to-day basis, will be the ones that I will use in a crisis. I am more sensitive to that, and I will develop them from that perspective. Therefore, I will spend more time pounding on office doors and establishing networks no matter how remote they may be, or how distant they may appear, to ensure that I have the broadest base from which to operate in the crisis.

Those who remarked on the issue of networks agreed unanimously on one key requirement for crisis managers. It is the need to get to know the people with whom crisis managers will likely interact during disaster.

Managing Resources in a Crisis

Most respondents reported that resource management is more intense in a crisis than during daily operations. They also observed that the increased intensity is primarily due to two main factors: critical shortages of needed resources, and the pressure to have these resources almost immediately so that lives can be saved.

Nearly all interviewees defined 'disasters' as situations that demand a response effort which exceeds a community's resource base. Ron Wolsey remarked that the determination of a situation as a 'crisis' varies from community to community depending on the resource base of each community.

According to Mark Egener, crisis managers "must have a good understanding of their resources, where they are and how they can be brought into play." Greg Smith remarked that these managers need to understand the limitations of the resources which they own or those made available to them. Other respondents also noted that this information is best learned prior to the impact of a disaster, as part of an overall planning process. Nearly every respondent stressed the value of that planning process.

Many interviewees observed that disaster response activities often focus attention away from daily operations. However, they also noted, many of these daily operations must still be performed. Therefore, both human and material resources must be allocated to meet the needs of the area affected by the disaster as well as the rest of the community. Respondents noted that effective resource management is crucial to effective disaster operations.

Most interviewees noted that during crises they had greater authority to acquire resources, get approval for action, and spend financial resources. They also observed that they could undertake these expenditures of human, material and financial resources with a reduced burden of 'red tape.' Respondents remarked that during crisis operations they could bypass, short-cut, or even ignored the normal administrative procedures of their organization. Jim Hoffman referred to these administrative procedures as the "bureaucratic baggage" which is often left behind in crises.

Most respondents observed that their decisions and actions in a crisis often involved some degree of financial and legal liability. They reported that disaster operations contained a certain degree of necessary 'administration' in the form of logs and diaries to record key decisions, actions, and expenditures. Mark Egener had this advise for crisis manager:

> Paperwork tends to go by the board in a crisis. People are not signing off letters, and so on. In a crisis people tend to be more verbal through any communication channels that they can find. But at the same time, they are left with no written record, no paper trail. This will haunt them forever. Some people perceive that they do not need the paper work. But, they might find that the best thing they can do is have someone going behind them and keeping notes of everything that was said, everything that was done, and keeping a trail of decision, meetings, actions that were taken, times that were crucial.

Dr. John Butt remarked that crisis managers must also remember the basic administrative requirements of effective field operations--food, lodging, and necessary resources to perform the job. He observed that crisis managers "have to anticipate that people [will] get tired, and [will] expect to get fed properly."

Preparing Managers to Manage Crises

All interviewees were asked to comment on the differences, if any, between managers in general and crisis managers. They were also asked to identify the manner in which they would train other individuals to become effective crisis managers.

What are the Differences?

All interviewees were asked: "is an effective day-to-day manager also an effective crisis manager?" The majority of respondents responded with a 'no', three responded with a 'that depends', and two said 'yes.'

Steve Beatty and Inspector Orest Oginski both replied with a 'yes' because, according to them, the skills are the same and only the context of their application is different. They concluded, therefore, that a manager who is effective in daily operations should be able to employ the same tools as effectively in a disaster. Steve qualified his 'yes' response by stating a number of conditions for managers to be effective as crisis managers. These conditions included: provision of individual crisis management training, creation of emergency plans, conduct of exercises to test these plans, and senior management commitment to emergency preparedness. He noted: "Crisis management, in most cases, is just common sense, and you [end-up] doing what you are paid to do."

Four respondents observed that 'crisis managers' could be synonymous with managers in general, but that it depended on a number of factors. Wayne Marr noted that crisis activities and functions are like those of daily operations but are different in magnitude. He observed that some managers who perform well in daily requirements fail as crisis managers because of their inability to cope with the time pressure of crises. Jim Hoffman observed that

> There are a lot of management tools that we have on a day-to-day basis that apply just as much to the operation in a crisis. If a manager is a good manager in caring about people, the product, the organization and society and is doing that well, then the skills that get him through that will also get him through in most cases [in a] crisis.

However, most respondents observed that effective general managers are not necessarily effective crisis managers. The various reasons provided for this differentiation related to the context of disasters. As noted above, disaster scenarios involve demanding decision making based on limited information, severe time pressures, life and death consequences, and complex organizational requirements. Most interviewees remarked that crisis management demands that managers operate in a manner significantly different from daily operations. These interviewees identified six key skills which effective general managers must demonstrate to become effective in a crisis situation.

One of the skills was identified as the ability to operate without 'the rule book.' As Greg Smith observed, "the good day-to-day manager generally sticks to the rules and follows a set procedure [or] set protocols for doing things. In a crisis situation, quite often protocols are not clear." His view was reflected in the comments of many other respondents.

The second skill was reported as the ability to 'make decisions on the fly.' John Tanchak noted that a lot of managers "are not decision makers. They have committees to advise them on whether they should [do this or that]." John observed that to become effective crisis managers, these individuals would need to be able to make decisions with limited information, stressful time pressures, and unbelievable consequences.

Coping with the lack of predictability was identified as the third skill. As Dr. John Butt observed, "there are a number of management styles that will only work in situations where planning predicts the outcome. Put into a situation where they do not know what the outcome is [general managers] cannot function." He also observed that crisis management requires constant review and adjustment of objectives, plans, and directives.

Wayne Marr noted that the standard operating procedures which are practised daily "become quite habit forming . . . suddenly [in a crisis] people are faced with having to make reference to something they do not have on hand, or they are not quite sure who exactly has the answers to the questions that are posed to them by a lot of high pressure sources."

A number of respondents identified the element of 'surprise' as a factor which goes hand in hand with the lack of 'predictability.' They noted that some managers can not operate well in a crisis environment where unpredictable events do occur and where expected outcomes of decisions and actions do not. Many observed the need for crisis managers to be flexible and adaptable to the disaster's evolving environment.

Another skill was identified as being 'a risk taker.' Many respondents observed that crisis managers must take risks. Knowing full well that they do not have all the facts, and knowing the tremendous consequences if their decisions or directions are wrong, crisis managers must still take a stand. They must make decisions, issue directions, and take action. Some effective general managers may not be experienced in that environment, or may not be personally suited for such a task. If placed in a crisis management position these managers may fail.

Communication was identified as a critical skill for crisis managers. Respondents observed that effective crisis managers need the same basic communication skill as their day-to-day counterparts. The key difference is that the former must learn to communicate clearly in a vacuum of information, in an emotionally charged environment, under time pressure, and with the knowledge that there are no 'truths.' Whatever is communicated now can easily become stale, inaccurate, or dangerously misleading in the near future. Jim Hoffman observed that "often crisis management depends more on feedback than on planned process." Crisis managers must be well rehearsed in the communication process. They must also be effective listeners and capable of relating information clearly and accurately.

According to Sam Baird, a compelling reason for general managers not to become crisis managers is their desire to avoid crisis situations. He noted that the realization by an individual, that he or she does not wish to manage a crisis, is beneficial for both the individual and the organization.

"Seat of the Pants" Process

In the process of describing their activities during a disaster, many of the interviewees commented on managing by 'the seat of their pants.' Although the term meant different things to different people, it generally reflected the ability to incorporate experience, training and intuition towards making decisions quickly and adapting to a rapidly evolving situation.

Wayne Marr observed that flying by the seat of one's pants really means that "you are now responding by instinct from years of well practised management skills on a day-to-day basis. . . . You are continuing to collect information and aim precisely at what you want to do, list all your factors, leave your options open and go with it. It is a faster process."

Dr. John Butt remarked that managing by the seat of the pants was a basic form of risk taking. He noted that crisis managers must be able to confront new and confusing situations, analyze them, make decisions on preferred course of action, and fly with it.

Jim Hoffman, on the other hand, took exception with the term 'flying by the seat of the pants.' He stated "if the seat of the pants means that you are operating on instinct and the instinct is based on other experiences that relate to it, [then it is part of] crisis management. But, if the seat of the pants analogy means that [you] have never done it before and we just go by intuition, you will likely get into very serious trouble." He called the latter approach 'adhocery' and noted that it does not work well.

The Training of Crisis Managers

Experience was deemed to be a critical element of effective crisis management. It is one of the important tools of effective crisis managers. Respondents addressed both the content of crisis management training, as well as its process. Each is discussed separately below.

The content of crisis management training. Most respondents observed that potential crisis managers should be exposed to the 'realities' of disaster and made to understand the unique environment in which they may have to operate. Moreover, as Ron Wolsey observed, the training of crisis managers may be analogous to the training of soldiers. Both have to be given a sense of what their war/crisis reality might be like. Moreover, as Corporal Rennick noted, crisis managers must be "knowledgeable about all the things that could go wrong." Ron Wolsey remarked that crisis managers should be trained over and over again to do their job so that they could be able to perform their tasks even under pressure.

Mark Egener observed that training programs are useful both as opportunities to learn new skills, as well as occasions to think-out new ideas and processes. He noted:

> There is a lot of evidence that suggests that training certainly helps ... People have thought about where they are going to go, what sort of systems they are going to try . . . to help manage the crisis. [However], unless they have had that exposure of training and of thought process before hand they [will] have to invent it when [a crisis] happens. Then it is too late.

There was general agreement among respondents that crisis managers need to have a solid grasp of general management principles and practices. However, respondents also observed that crisis managers need additional training which would prepare them for their unique crisis role. The components of this training were as varied as those who recommended them.

Crisis managers need a basic understanding of the various roles which need to be performed during a crisis situation. Moreover, they must be able to understand the 'big picture' or the way in which their activities relate to the activities of others. Dr. John Butt noted that these managers also need to understand the requirements which may surface in a disaster.

Don Campbell observed that "anyone could potentially be a crisis manager with training." He also noted that in a crisis the "most critical [skill] of all is the free passage of information." He suggested that potential crisis managers should hone their communication skills. Jim Hoffman and Sam Baird observed that crisis managers should understand general organization behavior as well as the mechanics of government.

Many respondents stated the need for training on decision making under stress. Don Campbell stated that "not all managers are necessarily quick decision makers. . . . In a crisis, you need someone who is capable of making a rapid assessment of the situation from limited information and making the most effective decision out of limited possibilities. That is something that you can be trained to do."

Crisis managers need to develop the following abilities: to adapt to rapidly changing circumstances, to plan, to operate within a multi-organizational setting, to conduct disaster exercises, and to work with the media.

The process of crisis management training. Nearly all interviewees observed that the best way to train potential crisis managers is through direct, real and meaningful experience. John Tanchak observed that crisis managers "have to have exposure to situations or potential situations that could cause [them] to become crisis managers."

Wayne Marr remarked that "organizations should have a training philosophy" where a great majority of the organization is trained to work together in a crisis. He also remarked that "every subordinate manager should be prepared to step to the level above [him]." These managers should be trained to do the job of those two levels below them, and be prepared to take over their supervisor's roles.

Nearly all interviewees suggested the use of case studies, role modelling, and exercises as ways to infuse realism and 'experience' into the training of crisis managers. Don Campbell noted that "the ideal training would be to put someone in a situation where they could learn in a certain fail-safe mode how they would react to a crisis. [Essentially] test them without breaking them."

Most respondents noted that crisis managers need to be trained as individuals and as members of large multi-organizational teams. Moreover, it was generally agreed that disaster training and exercises need to be conducted on frequent basis. Greg Smith commented that "you cannot expect somebody to be a good crisis manager if the organization never experienced crisis except in . . . rare situations." Inspector Orest Oginski stated a similar observation and added that "probably, as a crisis manager, the number of times that you have dealt with this situation will also dictate to a degree how you approach it" and how well you perform. He concluded that familiarity with crisis management is an important element in the education of crisis managers.

Exercises were reported to be a great training mechanism as well as a useful assessment tools. Ron Wolsey observed that "it is through training and through exercises where you can actually make the determination as to whether a person is a good crisis manager and you allow them to make a similar determination [about themselves]." He also noted that "people who are expected to perform crisis management functions can really benefit from the opportunity of self appraisal in simulated crisis situations."

Inspector Jim Cessford remarked that crisis managers may gain their experience vicariously from the experiences of others. He recommended to crisis managers to read about other disasters and to talk to those who managed crises. Andre Dimitrijevic recommended that crisis managers pay attention to the *details* of how crises were managed elsewhere.

Summary of Chapter 8

This chapter contained the findings which related to the process of crisis management. The chapter's content was covered in three parts. The first part contained an outline of the effect of disasters on the ability of crisis managers to manage community wide disasters. The second contained a discussion of the key activities of crisis management and the major principles of the process. The third part relateed suggestions on how managers can be trained to become effective crisis managers.

CHAPTER 9

Summary, Conclusions, and Implications

This chapter is presented in four separate parts. Part one provides a summary of the research design and methodology of the study. Part two includes an overview of the findings. Part three lists the key conclusions. Part four contains a discussion of the implications of this study for practice, theory, and research.

Summary of Research Design and Methodology

The study is summarized in terms of its purpose, the justification for it, its conceptual framework, and the research design and methodology employed in its conduct.

Purpose of the Study

The primary purpose of this study was to identify and describe the principal components of the process by which community-based crises are managed. The study utilized the perceptions of experienced Canadian crisis managers.

The management of crises, especially at community level, was perceived to require skills beyond those demanded of general managers. Moreover, crisis managers are often thrust into the chaotic environment of crises with little more than basic technical training and rudimentary management skills. The study was intended to provide these managers and their trainers with a general framework which could serve as a basis for a much needed 'crisis management' training program.

The second purpose of the study was to identify the key skills which managers required to effectively manage crises. To meet this objective respondents were asked to answer two key questions. The first was "what are the specific skills required of crisis managers?" The second question was "what, if any, are the differences between the application of these skills during crises and in daily operations?"

The third purpose of the study was to identify key approaches to the training of crisis managers. The modes of training recommended by respondents were to serve as a framework for the 'process' of a crisis management training program. The 'content' of that program was to be generated from the skills identified by the respondents.

The current literature on general management practices and disaster response operations was also reviewed. It served as a basis for the development of the conceptual framework, questionnaire, and interview questions.

Justification of the Study

This study was conducted to fill a critical gap in the literature, and to assist in the training of managers who might have to manage an operation in response to a community's crisis.

At first glance it appears that this study may not be needed. Much has been written on general management skills and practices, emergency management, and disaster response. The literature is enhanced by a multitude of training programs which provide a guide to individuals through all functions of management. As well, a number of courses are provided throughout the world, to train individuals in effective disaster response and emergency management techniques.

The problem is not so much in what is available as in what is missing. For example, the literature on management lacks specific guidance to potential or novice crisis managers on the 'process' which they should consider following when managing community-wide crises. Moreover, the literature and more so traditional emergency management courses, advise managers that they must communicate and make decisions within the crisis environment. However, in many cases, these managers are not provided the appropriate context in which their management skills will be tried, and often tested to the limit. As was borne by the study's findings, the consequences are that managers 'fly by the seat of their pants' and learn on the go. Learning on the go during crises can cost dearly in lives and property.

This study has both a global perspective as well as a unique Canadian flavour. On the one hand the study focused on a problem of global magnitude. The issues which it addressed are of concern throughout the world regardless of linguistic, cultural, geographic, and socio-economic divisions. On the other, the study is based solely on the perceptions of Canadian crisis managers. It is the first such study in Canada and may well serve as a basis for the training of crisis managers at federal, provincial, municipal, and industry levels both in Canada and abroad.

The study advances the process towards the much needed development of a disaster management profession. A number of writers have identified recently the need for a profession of crisis managers and emergency responders. They called for the growth of knowledge and skill in the respective fields. Unfortunately, the profession is still in its infancy and its development has yet to gain sufficient attention or concerted effort.

The study also highlights a void in the emergency preparedness efforts of individual schools and school systems. The literature has little to guide school administrators in the general preparedness of schools for disaster. Moreover, these administrators are often isolated from the planning efforts of their community.

The practical justification for the study is that it provides two critically needed tools for the creation of a comprehensive crisis management training program. One is a listing of the key components of the crisis management process. The other is an indication of the training methodologies which best suit crisis managers.

The study has already received much support and attention in Canada at various levels of government. All indicators point to the applicability of this study to 'local' needs and conditions.

Conceptual Framework

The conceptual framework for this study was developed on the basis of accounts of actual disaster response efforts throughout Europe, Australia, and North America. These accounts portrayed an environment which was drastically different from day-to-day management practices. The management of these disasters required a high degree of adaptability and the modification of many of the general management processes.

By their very nature, disasters are chaotic and stressful. They present unique challenges and tax organizational resources, structures, and procedures to the limit. Disasters are extraordinary and 'abnormal' events. They often result in the total destruction or significant disruption of the community's infra-structure. Moreover, disasters have a significant effect on general management processes which assume existing procedures, available resources, and functioning infra-structure. The response to disasters requires, therefore, modified or unique management practices.

In addition to organizational and managerial complications, disasters also pose predictable emotional and mental strain on all those who were involved with these events. Crisis managers are not spared from the strain of the disaster, and their ability to manage is often profoundly affected.

Research Design, Instrumentation, and Methodology

Research design. This study is both descriptive and exploratory in nature. It was designed to provide grounded theory on the management of the response efforts to major calamities. The study is based on the perceptions of crisis managers whose experience and responsibilities during disaster operations provided a broad and unique view of these operations.

The study focused on a broad set of disaster contexts. It included diverse organizations, organizational levels, geographical settings, and response requirements. This focus was intended to result in findings which could be applied internationally.

This study is based on the 'naturalistic' method of inquiry as described by Guba and Lincoln (1982) and Lincoln and Guba (1985). It is also based on the naturalistic paradigm as defined by Owen (1982).

Owens (1982) wrote that the naturalistic paradigm is founded on two key concepts which he named the *naturalistic-ecological hypothesis* and the *qualitative-phenomenological hypothesis*. He noted that the former "claims that human behavior is so significantly influenced by the context in which it occurs that regularities in those contexts are often more powerful in shaping behavior than differences among the individuals present" (p. 5). The second hypothesis states that to understand human behavior one must understand the framework which individuals employ to interpret their environment. That framework "can best be understood through understanding their thoughts, feelings, values, perceptions, and their actions" (p. 5).

Research Instrumentation. Two fundamental research methodologies were employed on this study--questionnaires and interviews. The questionnaire survey approach was deemed to be the most appropriate research method for collecting *general* data. More detailed information was then gleaned through direct interviews with selected individuals.

The questionnaire was developed after an extensive review of the literature on the effects of disasters on organizations. The literature review also identified the lack of questionnaires which could address the needs of this study. Therefore, a unique questionnaire was required and was developed by assessing the key elements of organizational behaviour in a disaster: decision making, communication, and coordination.

The questionnaire used in this study was titled "Crisis Management Questionnaire" (Appendix A). It contained three major parts. The first asked for general information on the respondent's background and experience. The second requested data on the impact of disasters on selected management functions. The third included general questions on the crisis management process.

The information collected through the questionnaire provided both quantitative and qualitative data. Quantitative data were collected through a series of fixed-response questions. Qualitative data were obtained through four general open-ended questions at the end of the questionnaire.

Broad questions were developed at first and were offered to four colleagues for their critique. These individuals were from various emergency response fields and were similar in backgrounds to those of potential responders. Based on their valuable feedback the questionnaire was modified and presented as a "pilot" to six emergency responders from Edmonton's police and fire services. These individuals were also asked to check the questionnaire for ambiguous instructions and questions, and to note any repetitions. They completed the questionnaire in less than 30 minutes, and also provided verbal feedback on its layout, content and readability.

Following the pilot a number of revisions were made and the questionnaire was again reviewed. This time it was analyzed by three doctoral candidates from the Department of Educational Administration. Their task was to fine-tune the layout and format of the questionnaire. Minor revisions were made at that time.

The questions for the interviews were based on the responses to the questionnaire. Five key questions were developed to form the framework of each interview. Each of these questions contained one or more follow-up questions that were to be used for clarification as necessary.

Issues of credibility, transferability, dependability, and confirmability were addressed in the study through various procedures.

Research methodology. One of the key difficulties in this study was that no single individual or agency, at municipal, provincial or federal levels, had a comprehensive list of those who were involved in the management of crises. To overcome this problem, the study involved a mixture of both 'reputational' and 'snowball sampling' techniques. Participants were, therefore, selected in stages.

The first stage involved two key letters sent by senior local government officials. The first letter was from the Regional Director of Emergency Preparedness Canada (Alberta/NWT Region) to his colleagues in Ottawa and the Regions. The second letter was sent by the Managing

Director, Alberta Public Safety Service (the provincial emergency measures organization) to his provincial colleagues across Canada. These senior federal and provincial government officials were expected to have links into the local network of disaster responders and emergency managers. Both letters informed these officials of the study and requested their support when approached by the researcher.

The researcher then sent a letter to these public officials in which he included a list of disasters. These officials were asked to identify potential respondents, namely those who were involved in managing all or a portion of the listed disasters.

Individuals who were identified as potential respondents were registered on a data base. A cover letter and the questionnaire were then sent to them. They were asked to complete the questionnaire and, where possible, also identify "others who supervised or managed disaster response efforts." This approach generated additional names of people to whom a questionnaire was sent.

Two hundred questionnaires were sent during the five month data-collection period. One hundred and seventeen responses were received representing a response rate of 58.5%. Of these 14 responses were unusable. No follow-up reminder letters were sent because responses provided adequate and accurate data base for the interviews.

Upon receipt, each questionnaire was numbered sequentially to indicate the order in which it was received. Responses were entered into two separate computer data bases. One included all quantitative responses, the other, all narrative responses. At the end of each response was recorded the number identifying the questionnaire from which it was copied. This process permitted, where required, the verification of responses and their review.

Interviewees were selected based on a variety of factors: their willingness to share their experiences through the questionnaire, their exposure to the functions of crisis management, and their availability. Most were approached either in writing or by phone.

Interviews were conducted along the process which Dexter (1970) called 'elite interviews.' The process stressed the use of the interviewee's definition of reality. Interviewees were encouraged to introduce and explore the problem from their perspective.

Interviews were conducted primarily by phone with the only exception being those who were available to attend a face-to-face interview in Edmonton. The initial 18 interviews involved all five questions. These interviews were tape recorded and often lasted between 40-90 minutes with the average duration being about an hour.

The interview transcripts were compiled as soon as possible after each interview. A tape-transcriber was used for that purpose. A copy of the verbatim transcription was then sent to the interviewee with a cover letter. Interviewees were requested to review the transcription of their respective interview and make changes in it as necessary so that it best captured their intended meanings. A number of the interviewees did alter their responses. However, in most cases these alterations were primarily cosmetic and helped make their response more direct.

As the period of (initial) interviews came to a close it became evident that there were certain themes which could now be explored in greater depth. Coincidentally at that time there was a surge of nominations for participation in the study. The researcher took the opportunity to interview five more individuals for second-level 'supplemental' interviews. These interviews were of much shorter duration, typically lasting less than 30 minutes.

Data analysis reflected the descriptive and exploratory nature of this study. The quantitative data were analyzed through statistical techniques. The qualitative data were analyzed using factor analysis techniques. The former provided an initial basis for the findings. However, the findings were based primarily on the qualitative data.

Summary of the Findings

In this part, the findings of the study are summarized in five sections. In the first section an overview of the process is provided. In the second, the findings relating to the disaster impact period and crisis management are reported and summarized. The third section contains a summary of the findings relating to the impact of disasters on the ability to manage. In the fourth section the findings relating to crisis management activities are reported and summarized. In the fifth and final section is a summary of findings on the training of crisis managers.

An Overview of the Process

What is a disaster? It was unanimously agreed by respondents that crises, disasters, catastrophes or whatever they are named, are situations in which a community's infrastructure is overwhelmed. Often, such events required multi-organizational and multi-jurisdictional response effort to return life to 'normal.'

While using various terms, respondents generally defined crises as being significantly abnormal. Respondents observed that these situations typically contained the following elements: a high degree of risk to life and property, high demands for resources most of which were unavailable, unbelievable pressure to make decisions, exceptionally tight time-lines for action, an abnormally chaotic environment, a surprising degree of confusion in the communication of information, and an exceptionally stressful environment to operate in.

When did crisis management start? Respondents provided various points when they believed their crisis management process started. Their responses highlighted three key patterns. These may be generally categorized as: the onset of the incident, being 'called-out', and being overwhelmed. Moreover, many of those who were interviewed observed that one's involvement in the process depended to a large degree on one's level in the response organization.

What triggered the crisis management process? One of the sure triggers to activate a process of crisis management is the situation where an organization is being overwhelmed by the requirements of disaster response. Most respondents made reference to being overwhelmed and having to resort to a process other than their day-to-day operational procedure.

Some respondents reported that the reality of operating beyond one's ability was realized slowly. Others reported that the need for a crisis management mode of operations became apparent immediately upon arrival at the disaster scene. All respondents made reference to a change of pace, or a shift in their activity level, which provided a strong indication that they were operating in the unique (crisis) environment. In all cases, there was an accompanying shift of focus from administrative, dogmatic, bureaucratic, day-to-day procedures to the seemingly more pragmatic field-related operations. However, different organizations displayed the shift of focus in different ways.

When did the crisis management process end? Most respondents observed that the return to 'normalcy', however defined, was the indication that crisis operations have ended and normal operations resumed. The return of extra resources acquired for the disaster, the return of evacuees to their homes, the evacuation of all injured and deceased, or the clean-up of all debris and environmental hazards were reported as other indications that the crisis management process was over or unnecessary.

As one respondent aptly identified, the termination of crisis management is "when everyone's safety and well being were attended to and normal operations were adequate."

Many respondents also indicated that typically the formal end of the process involved the conduct of operational debriefings as well as the filing of reports. In a few cases these activities also signalled the dismantling of the response organization or its return to inactive 'stand-by' status.

The nature of the transition to/from crisis management. Responses indicated an interesting comparison. The shift from daily operations to crisis management was more rapid, dramatic, discernible, surprising, and stressful than was the shift back to daily routines and operations. Many respondents observed that although disaster onset can be almost instantaneous it need not be, and yet have the same effect.

Disaster Impact Period and Management Practices

Respondents were asked to identify the effects of disaster on their management practices during the initial response period. They were requested to identify their level of agreement with various statements. A summary of their observations is listed below.

Asked what was **unchanged** for them during the **initial** period of a disaster, respondents observed the following: their authority to make decisions (65.3%); their agency's role (63.7%); the reliability of their information (61.6%); the size of their organization (54.9%); the involvement of others (54.0%); and, the types of communications used (52.5%). Half of respondents believed that the accuracy of their information remained unchanged. Moreover, only 33.0% of respondents observed that the quantity of the information available to them remained unchanged.

When the above responses were analyzed according to the professional group of the responder, a number of patterns appeared. Though none proved statistically significant, these patterns did illustrate that disasters have an impact on the way organizations operate and, by necessity, the manner in which managers and individuals respond. However, the specific details depend on a variety of factors: the responder's professional background, responsibility level, and disaster function; as well as the nature, structure and culture of the responding organization.

Disaster's Impact on the Ability to Manage

Respondents were asked to identify the effects, if any, which disasters had on their ability to manage beyond the initial disaster-impact period. They reported overwhelmingly either an increase or no change in their ability to manage. Only a few reported a decrease in their ability to acquire resources (4.9%), to have control over these resources (5.9%), to take independent action (10.9%), and to set their own priorities (12.9%).

These responses were also analyzed according to the professional background of the responders. As in the previous section, the responses provided some interesting trends but none that were statistically significant.

Activities of Crisis Management

Generally speaking, respondents observed that the activities which managers performed in daily operations and in disasters were identical. Managers had to communicate, coordinate, make decisions, plan, and so on. However, disasters imposed their own unique context on normal management duties.

Respondents reported a number of key variables as providing the unique context of crises. These included a tremendous increase in all stressors; a shift in the crisis manager's roles; a focus on the crisis-related activities and away from the daily operation of the organization; an increase in the need for clear, concise, accurate, and timely communications despite the lack of data; an increase in the quantity and level of decision making by the crisis manager; greater consequence of error; and always, the gruelling pressure of urgency and lack of time. The element of stress, regardless of its cause, was reported to be the most significant difference between daily and crisis operations.

Respondents stated that effective crisis managers must be able to communicate, make decisions, and coordinate. Moreover, they need to do so with greater precision and control than they would be required to in daily operations.

According to the majority of respondents, effective crisis managers must be leaders. They must quickly gain the trust of those with whom they interact in the crisis environment. Leadership and the element of trust were remarked to be particularly important in crisis operations. These operations are more depended on verbal communication than daily operations, and many activities are initiated through verbal contact. Failure to establish trust may obstruct the flow of necessary resources or prevent necessary operations from taking place.

Nearly all interviewees reported a need for a network of crisis managers and disaster responders. They observed that these networks help crisis managers establish trust, meet their colleagues, and exchange ideas. Most importantly, these networks facilitate the flow of necessary resources in a crisis.

Interviewees were asked for their perception of the differences between daily managers and crisis managers. The majority noted that effective crisis managers are by necessity also effective in daily operations. However, they noted that the reverse is not necessarily true.

The interviewees observed that effective crisis managers must be able to: operate without rule books, make decisions on the fly, cope with the lack of predictability in their environment, be risk takers, and communicate with utmost efficiency. They noted that not all managers can manage under these conditions.

Training Crisis Managers

It was generally agreed that crisis managers require special training. They should be taught the technical or operational components of their organization as well as the principles of general management. Then, they should be taught to apply these in a crisis environment.

The training of crisis managers should include various crisis simulations. These should be as realistic as possible and should allow these managers to experience the unique and stressful nature of crises. Crisis managers from various response organizations should have an opportunity to perform their disaster roles during community disaster exercises. These exercise provide a tremendous learning opportunity as well as a way to develop and maintain the response network.

Conclusions

The following statements and generalizations succinctly summarize the conclusions reached in this research.

1. The management of the response to a large catastrophe in a community requires no 'new' skills. However, it does require the modification of existing general management skills and practices.
2. The most significant impact which disasters, crises, and catastrophes have on the management process relates to the context of these events.
3. The efforts to manage crises are conducted under exceptionally stressful conditions. Key stressors include short time-lines, the lack of information, the need to make decisions, the multi-organizational and multi-jurisdictional nature of disaster operations, the severe consequences of error, and the physical risks inherent in the disaster environment.
4. Manager must be prepared at three levels prior to

serving as crisis managers. At the basic level they need to know the technical aspects of their job and the jobs which their subordinates must perform on a daily basis. Then, they need to have a solid grounding in general management practices. The third component must focus on the nature of the disaster environment, its impact on management practices, and the ways in which these practices must be modified in a crisis.

5. Managers who are effective in daily operations may not necessarily be effective as crisis managers. It is more likely that effective crisis managers may also be effective general managers.
6. Managers must be sensitized, on a regular basis, to the unique needs of crisis environments and operations.
7. The best approach to training crisis managers is through disaster simulations: table top exercises, computer scenarios, case studies, and field exercises. These should be as realistic as possible and emphasize the unique nature of crises: a stressful environment in which one must make decisions, communicate, and coordinate resources or activities despite limited information.
8. Crisis managers must be trained and exercised as part of the 'larger team.' On the one hand this experience will give them a real sense of the multi-organization and multi-jurisdiction facets of disaster response. On

the other hand, these managers will also have an opportunity to develop and maintain their network.

9. Networks of crisis managers and other emergency responders are crucial to effective crisis management operations.
10. The three most important skills of crisis managers are communication, decision making, and coordination. All three are based on the element of trust.

Implications

The findings and conclusions drawn from this research highlight several implications. These ramifications are discussed below according to their relevance to practice, theory, and research.

Implications for Practice

This research provides a number of benefits for practitioners in the field of emergency preparedness and response. To begin with, the key benefit is that the study provides a framework for the training of crisis managers. The framework outlines the components of the crisis management process, and provides a basis for developing the 'content' of a training program for crisis managers.

Also provided are a number of suggestions for the process through which these crisis managers could best be trained. This is the first time that a formal study analyzed the two aspects--content and process--of such a training program.

Many practitioners and writers have expressed the need for a well thought-out program for crisis managers and responders. They stated a need for the development of a professional group which would advance both knowledge of and practice in emergency management--including both preparedness and response. The findings of this research can contribute towards the establishment of formal qualifications for various levels of crisis managers.

The study and its findings also assist in overcoming a major obstacle for practitioners--the lack of user friendly information. The current literature may be categorized into two groups--informal and formal. Articles in the first group appear in magazines and journals aimed at practitioners. They typically provide a narrow segment of one particular issue, personal accounts, or opinions of what may or may not work for others in the field. The articles are written in layman's terms and are readily available to practitioners. However, these articles are rarely referred to by the authors included in the second group.

The second group includes government reports about particular disasters, research into specific components of disaster preparedness and response, or other literary works with far reaching observations and conclusions. These items are typically in bound form and in a language far beyond that of many practitioners.

An obvious problem is that the authors from the two groups rarely compare notes. Moreover, those who should have the latest research findings are often insulated from it for various reasons. To overcome this problem, the findings of this research were written in the words of the practitioners who responded to it. Their views and experience are related to practitioners in a readable form.

This study should be followed by the development of a training program for crisis managers.

Implications for Theory

The findings of the study support and augment the literature on disaster response and emergency management. Furthermore, the experiences and observations related by the study's Canadian crisis managers appear to be similar to those of their colleagues in Europe, Australia, and the United States.

It appears that a step-by-step process-outline for the management of crises is neither practical nor meaningful. The primary reason for the impracticality of such an outline is the fluid, turbulent, and often unpredictable nature of crises.

Implications for Research

As a result of this research, several recommendations can be made for further research into the management of crises situations.

First, the study's findings highlight the need for more research into the links between the general components of the crisis management process and its detailed activities. There is also a need to view crisis management as a significant requirement of management and not as an anomaly.

Second, there is a need to devote as much attention to the functions of crisis management as has been provided to general management practices and functions. The specific mechanics of communications and decision making under pressure have not been fully explored, and need to be.

Third, a study could be initiated to analyze the personality traits of crisis managers versus those of their day-to-day colleagues. What, if any, are the differences? Of what significance are these differences in view of recruitment, selection, training, and operational deployment?

Fourth, an analysis should be conducted to identify the differences in the attitudes of fire, police, ambulance, government, and other respondents towards crisis management. Are there differences and are they related to the respondents' professional background? Moreover, assuming such differences as were suggested in this study, what are the consequences to a joint operation by members of these differing cultures?

Fifth, extensive research should be conducted into the effects of disasters on school organization and population--staff and students. Very little is currently known about the specific and perhaps unique impacts of disasters on schools, the ways in which schools have managed disasters, and the manner in which these disasters should be managed.

Finally, from an organizational behavior perspective, there should be further research into the skill(s) required to manage a situation where the old rules do not work and the new rules have not yet been defined. How could crisis managers bring together disparate jurisdictions and entities, in a volatile environment, under time pressures, and under differing agendas, to achieve a common goal?

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APPENDIX A

The Questionnaire

CRISIS MANAGEMENT QUESTIONNAIRE

Canada Wide Survey

Ron Kuban
Alberta Public Safety Services
And
Dept. of Educational Administration
University of Alberta

Questionnaire on "Crisis Management"

This questionnaire contains three parts. **Feel free to expand on any point!**

Part 1 - Context Questions

office use

- Which of the following disasters have you experienced? (Check as many as are appropriate)

☐ Air crash ☐☐
☐ Maritime accident ☐☐
☐ Dangerous goods ☐☐
☐ Rail accident ☐☐
☐ Earthquake ☐☐
☐ Slide (mud/snow) ☐☐
☐ Other (specify) ________________ ☐

☐ Flood
☐ Storm
☐ Industrial accident
☐ Structural collapse
☐ Major fire
☐ Terrorist act

- Identify the location and date (month/year) for each disaster which you experienced. __________ ☐☐

____

- To which organization did you belong during the disaster? (Check the **most** appropriate response) ☐

1. Ambulance
2. Military
3. EPC/EMO
4. Other government Dept.
5. Fire
6. Police/RCMP
7. Hospital
8. Rail Company
9. Industry
10. Red Cross
11. Other (specify) ________________ ☐☐

- What was your primary role during the disaster?

________________________________ ☐☐

- What, if any, were your secondary roles?

________________________________ ☐☐

- May I quote you in my report? ☐ Yes ☐ No ☐

Part 2 - Specific Questions

In each of the following questions please identify the degree of your agreement or disagreement.

Question 1 Typically, during the initial period of the disaster response...	strongly agree SA	agree A	disagree D	strongly disagree SD	unobserved U	office use
1) the roles of my Branch, Division or Agency were unchanged from their pre-disaster status.	1	2	3	4	5	☐
2) the size of my organization remained unaffected by the disaster.	1	2	3	4	5	☐
3) my authority level to make decisions remained relatively unchanged.	1	2	3	4	5	☐
4) the degree of involvement of others in my decision making process was unchanged.	1	2	3	4	5	☐
5) the quantity of information available to me was unaltered.	1	2	3	4	5	☐
6) the types or methods of communication available for my use were unchanged.	1	2	3	4	5	☐
7) the reliability of my sources of information equalled their pre-disaster status.	1	2	3	4	5	☐
8) the accuracy of my information was unchanged from pre-disaster level.	1	2	3	4	5	☐

Question 2

Typically, during the disaster response period...	significantly expanded SE	moderately expanded ME	unchanged UC	moderately reduced MR	significantly reduced SR	unobserved UN	office use
1) my ability to set my own priority for action was...	1	2	3	4	5	6	☐
2) my ability to take independent action was...	1	2	3	4	5	6	☐
3) my control over my resources was...	1	2	3	4	5	6	☐
4) my ability to acquire necessary resources was...	1	2	3	4	5	6	☐

Part 3 - General Questions

Listed below are general questions to prompt discussion about "crisis management". Please respond to these questions by commenting on **any** aspect which would help identify the specific **activities** of crisis management.(**Please use additional pages as necessary**)

1. What activities would you consider were the "start" and "finish" of the crisis management process in the disaster you experienced?

2. In your view, what are the activities of a"crisis management" process? (Please provide examples of each from your experience).

3. In your view, are the management activities performed by crisis managers different from those performed by day-to-day managers? If "yes" what are these differences? (Please provide examples).

4. What additional observations / comments can you provide which will add to a greater understanding of the crisis management process?

Your name: (Optional) ______________________________
Address ______________________________________
__________________ Phone (___) ______ - ______

Return to: Ron Kuban
Manager, Training Research and Development
Alberta Public Safety Services
10320 -146 Street
Edmonton, Alberta T5N 3A2

Thank you for your participation!

APPENDIX B

Letter to Federal Officials

Letter to Provincial Officials

Letter to Federal and Provincial Officials

Cover Letter to Questionnaire

Initial Letter to Interviewees

Cover Letter to Transcripts

MEMORANDUM

VIA FAX

DATE: March 10, 1991 **FILE:** 1920-1

TO: ALL RDs

FROM: RD AB & NWT

SUBJECT: **POST GRADUATE THESIS**

I have been requested for some assistance by a post graduate student (Mr. Ron Kuban). He wants to identify a number (about 20) of major disasters, less law and order, in the 85-90 period against which he can test a hypothesis.

At my age, memory may not serve too well, therefore, if you could fax me extracts or actual pages of your regional brief that identify emergencies in that time frame - the request would readily be met. As examples there are: Hinton rail accident (23 lives), Edmonton Tornado, AB Floods 1986/88/90, Manitoba Fires, BC floods and oil spill, St. Basille la Grande, Haggersville, NB floods, etc.

A reply by the end of March would be helpful.

J.M. Hoffman

cc: R. Kuban

VIA RAPICOM

Alberta

PUBLIC SAFETY SERVICES
Headquarters

Office of the Managing Director

10320-146 Street, Edmonton, Alberta, Canada T5N 3A2 403/427-2772

File: 3290-1

March 2, 1992

To: Distribution List

I am writing to advise you of a study into the component of "crisis management", and to request your assistance in compiling a list of contacts for the study.

The study is being conducted by Ron Kuban who is the Manager of Training, Research and Development at APSS, and also a Doctoral Candidate at the University of Alberta. His study focusses on major disasters which took place in Canada from January 1, 1985 to December 31, 1991 (see list attached).

Ron intends to send a questionnaire to 350 individuals (about 12 per disaster) who were actively involved as disaster or crisis managers. He will also interview up to 20 respondents to gain a greater understanding of the following:

- What are the components of "crisis or disaster management"?
- How do they link together"
- What skills should crisis managers be taught to prepare them for their disaster role?
- How to best teach those skills?

The benefit of the study to the emergency community is evident. This is a significant and a broad-based review, and a first such study to be conducted in Canada. Its findings should benefit us all. However, to succeed in this enterprise Ron requires contacts, those who were involved in the disasters listed for your province. If possible, could you identify these individuals by name, disaster, disaster position, current address and phone number.

Ron may be reached at the Training School of APSS, through the above address, by phone at (403)422-0346, or by FAX at (403)427-7782.

Your help is very much appreciated.

Yours truly,

I.D.M. Egener
Managing Director

3cc: Ron Kuban

Printed On Recycled Paper ♻

February 25, 1992

Mr. L.D. Pearce
Emergency Preparedness Canada
2881 Nanaimo Street
Victoria, B.C.
V8W 3A5

Dear

This letter is a follow-up to a letter which Jim Hoffman wrote to you late last year regarding my research on the components of crisis management. I am now writing to request your assistance.

I am the Manager, Research and Development at the Training School of Alberta Public Safety Services. I am also a Doctoral Candidate at the University of Alberta. My study focuses on major disasters (see attached) which took place in Canada from January 1, 1985 to December 31, 1991.

I intend to send a questionnaire to at least 350 individuals (about 12 per disaster) who were actively involved as disaster managers. I will then interview up to 20 respondents, to gain an in-depth understanding of the following:

- What are the components of "crisis management"?
- How do they link together?
- What skills should crisis managers be taught to prepare them for their disaster role?
- How to best teach them those skills?

The findings from this study should provide a broad view of disaster/crisis management in Canada and will, I suspect, serve as a launching point for a curriculum for crisis managers. However, to succeed in this enterprise I require "contacts", or, people who were involved in the disasters listed for your province. Would you please identify these individuals for me, by name, disaster, disaster position, address and phone number.

I will be delighted to share my findings with you, if and when requested. I may be reached at the Training School of APSS at the above address, by phone (403) 422-0346, or by FAX 427-7782.

Yours truly,

Ron Kuban, Ph.D. (Candidate)

August 9, 1993

Salute~ First name~ Last name~
Title~
Org~
Street address~
City Prov.~
Post code~

Dear Salute~ Last name~:

The attached questionnaire is part of my doctoral research into the "crisis management" process. The study aims to identify the differences, if any, between the **activities** performed by crisis managers and those performed by day-to-day managers/supervisors.

I was advised that you have managed or supervised response efforts in a disaster. When documented your experiences may benefit many others who are expected to perform similar skills. Consequently, you are invited to participate in this study by returning the completed questionnaire to me. The attached envelope is provided for your convenience.

Your response to this questionnaire is voluntary and should be based on your **experiences**! Feel free to comment extensively and to use examples. If you know of others who supervised or managed disaster response efforts, please send them a copy of this questionnaire, or advise me of their name and address.

Unless you authorize me to quote you in my final document **all** your responses will remain confidential. Furthermore, although you are asked to note your name, address, and phone number this information will be seen **only** by myself. This information will assist me should I need to return to you for clarification.

I look forward to your **reply by July 17, 1992**. Thank you for your support of this research effort. If you have any concerns or questions I may be reached at the address below, by phone (403) 422-0346, or by FAX 427-7782.

Yours truly,

Ron Kuban
c/o Alberta Public Safety Services
10320 - 146 Street
Edmonton, Alberta
T5N 3A2

March 5, 1992

Chief Jack McAllister
Barrie Fire Department
70 Collier Street
Barrie, Ontario
L4M 4T5

Dear Chief McAllister

Your name was referred to me by our colleagues in the field of emergency preparedness. I was advised that you may be able to assist my research into "the components of crisis management". I am writing to request your assistance in identifying likely participants for the study.

This research focuses on major disasters which took place across Canada from January 1, 1985 to December 31, 1991 (see attached). It will involve a questionnaire (sent to over 350 individuals) and interviews with up to 20 respondents. The study is designed to gain an in-depth understanding of the following:

- What are the components of "crisis/disaster management"?
- How do they link together?
- What skills should crisis managers be taught to prepare them for their disaster role?
- How to best teach them those skills?

The findings from this study should be made public by early 1993. They should provide a broad view of disaster/crisis management in Canada and will serve as a launching point for a curriculum for crisis managers.

I am looking for the individuals who supervised or managed their agency's response to the disasters listed in the attached. *Would you please identify these people for me* by name, disaster name, disaster position, address and phone number. Feel free to list as many names as possible, including your own name.

I look forward to your response, and may be reached at the above address, by phone (403) 422-0346, or by FAX 427-7782.

Yours truly,

Ron Kuban, Ph.D. (Candidate)

Alberta
PUBLIC SAFETY SERVICES
10320 - 146 Street, Edmonton, Alberta, Canada T5N 3A2 403/427-2772

October 5, 1992

Inspector Orest Oginski
Edmonton Police Services
Police Headquarters
9620 - 103A Avenue
Edmonton, Alberta
T5H 0H7

Dear Orest,

I appreciate the time and effort which you devote to your interview on "crisis management". The information which you provided is invaluable and I look forward to integrating it into my thesis.

Attached is the transcript of this interview. Please help me to capture precisely your comments by reviewing this transcript and making ANY correction as you see fit. I would appreciate the quick return of the attached to me so that I can proceed with my writing.

I trust that by replying to me you are confirming your verbal permission for me to quote from the FINAL transcripts.

If you require any assistance in this matter I may be reached by phone at (403) 422-0346 or FAX 427-7782.

Sincerely yours,

Ron

Ron Kuban

Printed on Recycled Paper ♻

APPENDIX C

List of Disasters

List of Disasters

Storms

Alberta	South region	Snow storm	May 14, 1986
	Edmonton	Tornado	July 31, 1987
Manitoba	Winnipeg	Snow storm	Nov. 7, 1986
Ontario	Barrie	Tornado	May 31, 1985
Quebec	Maskinonge	Tornado	Aug. 27, 1991

Floods

B.C.	Southwest region	Nov. 8, 1990
Alberta	Lesser Slave Lake	June 1, 1988
Ontario	Winisk River	Jan. 1, 1986
Quebec	Montreal	July 17, 1987
N.B.	Perth-Andover	April 2, 1987

Fires

Manitoba	North region	Forest	July 15, 1989
Ontario	Harron	Dangerous Goods	Jan. 1, 1990
	Hagersville	Tires	Feb. 12, 1990
Quebec	St.-Basil-le-Grand	PCB	Aug. 23, 1988
	Saint Amable	Tires	May 16, 1990
N.B.	Upper George Town	Forest	May 15, 1986
N.S.	Canning	Dangerous Goods	May 30, 1986
N.Fld.	Grand Falls	Forest	May 15, 1986

Accidents

B.C.	Blue River	Avalanche	March 23, 1987
Alberta	Hinton	Rail	Feb. 8, 1986
Manitoba	St-Lazare	Rail/DG	July 9, 1991
Ontario	Timmins	Rail/DG	March 31, 1986
	Dryden	Air	March 10, 1989
Quebec	St Leonard	Rail/DG	Dec. 12, 1989
N.S.	Off coast	Rowan Gorilla	Dec. 15, 1988
N.Fld	Gander	Air	Dec. 12, 1985
N.W.T.	Alert	Air	Oct. 30, 1991

Miscellaneous

Ontario	Ottawa	Turkish Embassy	March 12, 1986
	Ottawa	Bus hijack	April 7, 1989
Quebec	Saguenay	Earthquake	Nov. 25, 1988
	Oka	Civil disorder	July 11, 1990

APPENDIX D

List of Interviewees--Primary Interviews

List of Interviewees--Follow-up Interviews

List of Interviewees--Primary Interviews

- Sam Baird, Chief Crisis Management Division, Environment Canada
- Steve Beatty, Emergency Planning Coordinator, the Municipality of Harlton (Ontario)
- Mark Bennett, Emergency Coordinator, Winnipeg
- Dr. John Butt, Alberta's Chief Medical Examiner
- Don Campbell, Assistant Regional Director, Alberta/ NWT, Emergency Preparedness Canada
- Inspector Jim Cessford, Director Disaster Services, Edmonton
- Mark Egener, Managing Director, Alberta Public Safety Services
- Chief Dave Hodgins, Strathcona County Fire Department
- Jim Hoffman, Regional Director, Alberta/NWT, Emergency Preparedness Canada
- Wayne Marr, Executive Director, Saskatchewan EMO
- John Oakley, Director, Emergency Management, Vancouver
- Inspector Orest Oginski, Edmonton Police Services
- Tim Prawdzik, Municipal Advisor, Manitoba Environment
- Corporal Dan Renneck, RCMP 'K' Division
- Greg Smith, Mines Specialist, Alberta Occupational Health & Safety
- John Tanchak, District Officer, Alberta Public Safety Services
- Bill Weagle, District Manager, Nova Scotia EMO
- Ron Wolsey, Executive Director, Alberta Public Safety Services

List of Interviewees--Follow-up Interviews

- Andre Dimitrijevic, Coordinator, Manitoba EMO
- Don Gnatiuk, Course Designer, Alberta Fire Training School
- Bill Goodwin, Manager of Services, Edmonton Branch The Canadian Red Cross Society
- Dr. Bill Kramer, Assistant Fire Chief, Cincinnati
- Bill Miller, Manager of Safety, Cardinal River Coal
- Bill Stephenson, Vice President, Novacor Chemical Ltd.